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A Weekly Newspaper Devoted to the Industrial, Financial, Railroad,
Mining, Contracting, Engineering, Building, and General
Business Interests of the South and Southwest

Vol. 67
No. 26

ESTABLISHED 1882

\$4.00 Per Year
Single Copy 15 Cents

"Faith Is the Father of Prosperity."

Mr. Edward L. Thomas, of the Thomas Grate Bar Co. of Birmingham, in a letter to the Manufacturers Record giving some information in regard to the betterment in business conditions with his concern by reason of increased hustling, says:

"We are still adding to our forces, expending our greatest energy, realizing 'Faith is the Father of Prosperity,' and with our opportunities being thrust upon us greater as the days come and go, we see wherein shortly, war or no war, the United States with all of its resources will be taxed to take care of the demands that will be made upon us."

That is the spirit which should exist everywhere in this country, and pre-eminently so in the South. While it is true that "Faith is the Father of Prosperity," it is also true that "faith without works is vain," and unless this faith is backed by active work the individual concern, the section and the nation will fail to realize the prosperity which ought to be had. If all the business concerns in the country would follow the example of Mr. Thomas in backing faith in their own efforts and in the limitless possibilities of the country with active work in the development of individual business, prosperity would soon be created.

In his letter Mr. Thomas, referring to the suggestion that the South needs optimism in action, says:

"Our company is with you, having seen the trend of things as far back as August, and instead of cutting salaries and reducing our forces added to the same, maintaining our regular salaries, but advising each one to try and do a little more. The writer took the road and visited from Canada on the north, Massachusetts and Rhode Island on the east, to Texas and Oklahoma on the west, to the Gulf on the south. As the consequence you can find our product in all of these sections."

A good many people have failed to put into effect the combination of faith with works. Neither will accomplish much by itself. The two in combination are all powerful in securing results.

BALTIMORE, JULY 1, 1915



First Aids to the Boiler Room

CLINCHFIELD FUEL COMPANY

SPARTANBURG, SOUTH CAROLINA

The Bailey-Lebby Co. MACHINERY and SUPPLIES



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We Carry a Complete Line of REVERE Goods

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Conveying MACHINERY
MUNDY HOISTING ENGINES
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AGENTS FOR
DISSTON SAWS AND KNIVES
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Eureka Linen Fire Hose



When fire breaks out in Houses, Institutions, etc., lives are imperilled and the question frequently arises at such a critical moment, as to whether the Hose will give effective service.

No such question arises where

EUREKA LINEN FIRE HOSE

is used.

Why? Because it is as near perfect as human ingenuity can make it, being proof against mildew and rot. It has a longer record of continuous use than any other brand of Linen Hose.

It is woven in CIRCULAR form (in precisely the same way it assumes when being used) not FLAT, as in some others, and is uniform strength throughout.

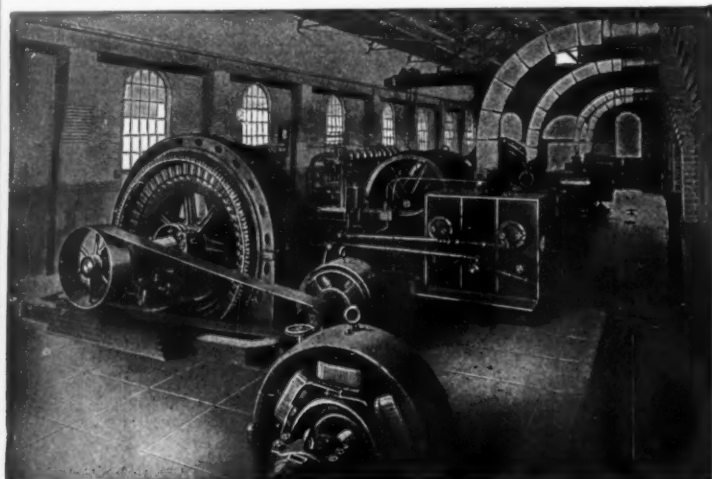
You can depend upon Eureka Linen Fire Hose to protect your life and property.

EUREKA FIRE HOSE MFG. CO.

27-29 Barclay St., New York







A BALL INSTALLATION MEANS SATISFACTION TO THE OWNER

because every detail of these engines is built with an eye to service.

When you buy a Ball Engine you buy **reliability**. Is that the kind of an engine you want? Then write us

Engines built in several types to meet a variety of requirements.

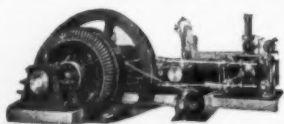
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50 to 10,000 H. P.

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200 to 3000 H. P.



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Boilers of All Styles and Sizes

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For Cotton Seed Oil Mills, Compresses and Gins, Canning and Packing Plants, Clay Working, Sand and Gravel Plants, Phosphate and Fertilizer Plants.

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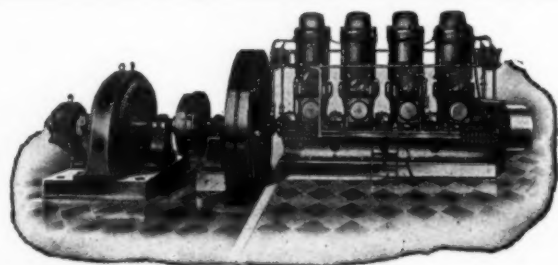
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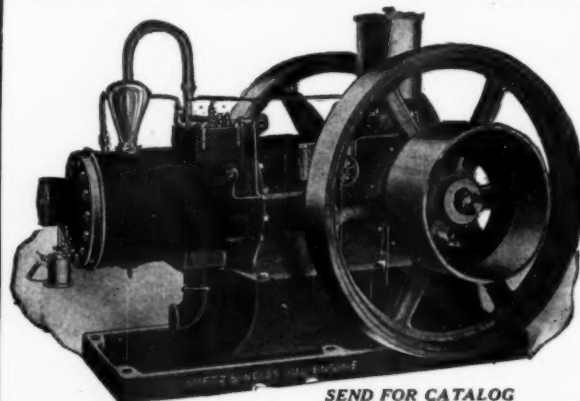
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Operate on Kerosene, Distillate, Cheap Fuel Oils, Crude Oils and Alcohol

No Gasoline Used, No Electric Ignition Devices

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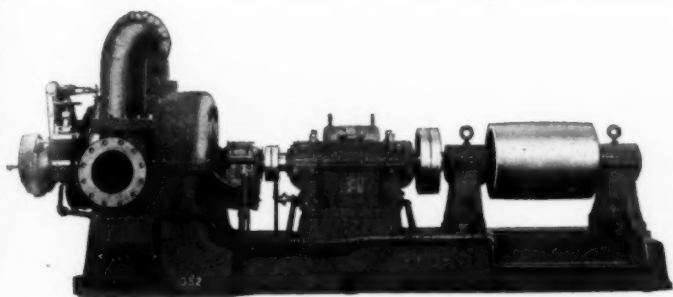
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129 Mott Street, New York

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Terry's for Service—Always

Terry "Composite"— Teaming with an Engine

The above Terry "Composite" turbine has just been installed at the Palmer Brothers plant, Fitchville, Conn. It is designed to deliver 300-350 H. P. with 1-lb. initial steam pressure and 28" vacuum.

The turbine usually operates on the exhaust from a 300 H. P. non-condensing engine, and turbine and engine together drive the main line shaft, the load being adjusted by the engine governor.

But in case the engine is shut down, the Terry takes high pressure steam at 125 lb. and its speed is controlled through the turbine high pressure governing valve.

The turbine operates at 3600 R. P. M., the speed being reduced by Herringbone Gears.

Note the ability of this turbine to operate on low or high pressure.

Composite Feature:

The feature of using two types of elements, each operating in its most efficient range, is standard with all the leading turbine makers abroad for large machines.

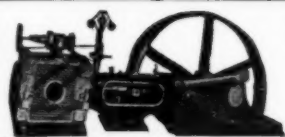
This Is the Low Temperature Turbine:

The reduction of pressure in the velocity staged high pressure element results in the highest temperature in the casing being due to steam at about atmospheric pressure. This in turn greatly reduces expansion and assures maintenance of shaft alignment.

Why not write for illustrated Bulletin 203?

The Terry Steam Turbine Company
Hartford, Conn.

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ZANESVILLE, OHIO, U. S. A.

Manufacturers of
The Ohio Corliss Engine
Send for Catalogue.

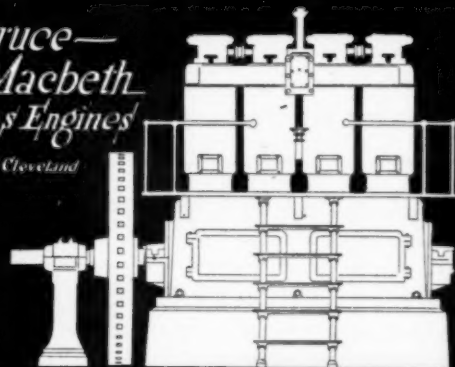
The CRESCENT OIL ENGINE

offers the most economical power for small plants.
Built in sizes—10 to 50 H. P.

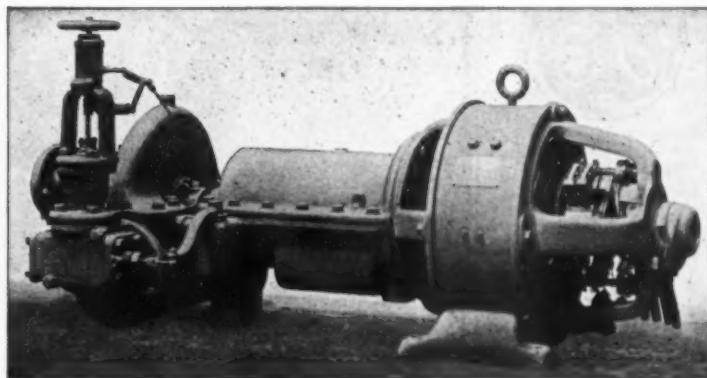
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*Bruce—
Macbeth
Gas Engines*
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Vertical, Multi-Cylinder for private or Central Station power plants.
For particulars write The Bruce-Macbeth Engine Co., 2135
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The Westinghouse Geared Sets mark a distinct advance in the building of small alternating and direct current units. The turbine operates at a high, economical speed, and the generator at such a low speed that commutation and mechanical troubles are unknown.

The unit is self-contained and very compact, so no expensive foundations are required. The lubricating system is entirely automatic and needs but infrequent attention, as there are no oil or grease cups to be filled. The amount of oil used is but a fractional part of that required by a reciprocating engine of the same size and the exhaust is free from oil.

The units are very simple and so designed and built that long life and thorough reliability are assured.

Westinghouse Electric & Mfg. Co.

PRIME MOVER
DEPARTMENT

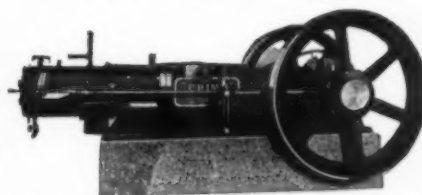


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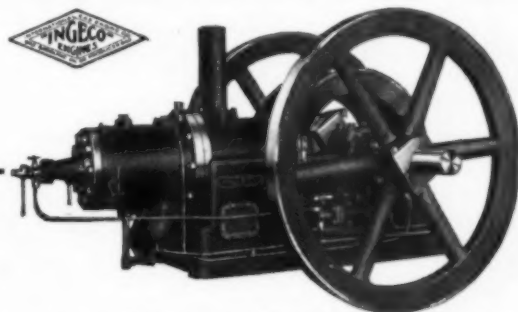
The "PRIMM" CRUDE OR FUEL OIL ENGINE

RUNS on any fuel that any internal engine will run on successfully and on fuel that most manufacturers say is impossible.

No valves, gears, side shafts, hot bulbs, hot heads, or electrical sparkers for trouble makers, and starts on the fuel on which it runs. Has been on the market for more than eight years and is not in the experimental stage. The height of simplicity and effective for any purpose. One customer writes: "She runs so nice we haven't the heart to stop her."



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Here is the right engine for Industrial and Municipal Plants, or wherever work is severe and exacting, dependability important and operating cost of consequence. Suitable oils are everywhere available at a low price, and consumption is far less than in ordinary types of oil engines.

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Open Crank Case permits free circulation of air around bearings without forcing impure air into cylinder. Extremely large Scavenger Piston provides ample pure air. Fuel thoroughly atomized, assuring complete combustion. Simple, powerful Centrifugal Governor. Spacious Water Jackets. All Bearings and revolving parts of liberal proportions. Force Feed Lubrication. All Parts easily accessible. Liberally rated—delivers power quietly and without undue heating or stress of parts.

Consult Our Engineers.—If contemplating new or additional power equipment, confer with our engineers. Write for information.

International Gas Engine Co. 146 Holthoff Place, CUDAHY, WIS.
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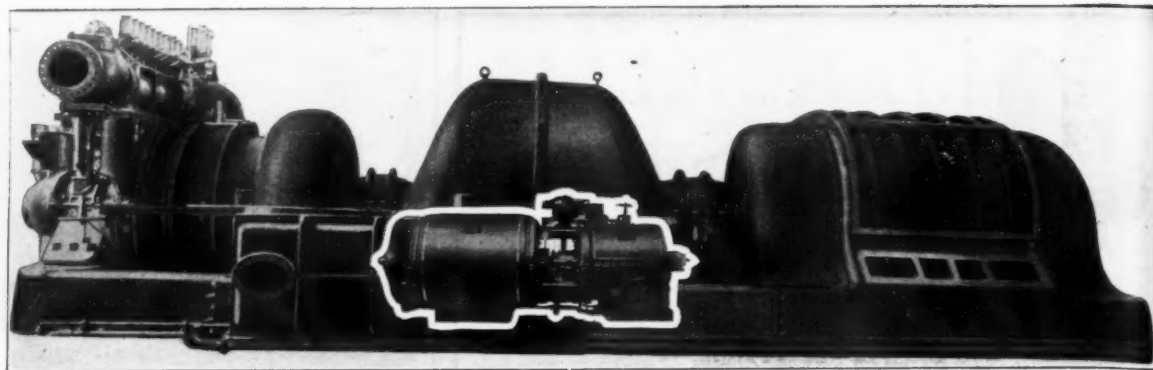
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Not the smallest nor the largest General Electric Company turbine, but both big factors in modern power production

Large steam power plants are now universally equipped with turbine generators.

The small plant presents precisely similar opportunities for low cost of power. Many of the determining factors are the same. The most important of these is the correct choice of the prime mover. High economy over a wide load range, freedom from shut downs, low maintenance; these are some of the elements necessary for cheap power production.



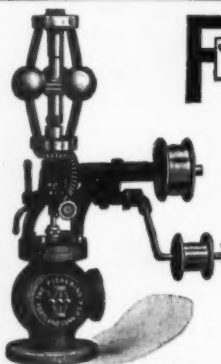
In the small plant, as in the large, experience has shown the superiority of the Curtis type of turbine. The same principles apply to the 300 Kw. as to the 30,000 Kw., and the 300 Kw. and other small size turbines are designed and built with same care and perfection of detail which characterize the world's largest turbine.

The result is that the small Curtis turbine has made possible the production of an uninterrupted supply of relatively cheap power.

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Because of directness in Action the Pickering always gives greatest efficiency, not only when first installed, but after long and continuous duty, for there cannot be any lost motion from wear, and is the only Governor without joints.

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**Close in Regulation for
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For Steam Engines, Turbines,
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Advise us of your requirements. Our prices interest.

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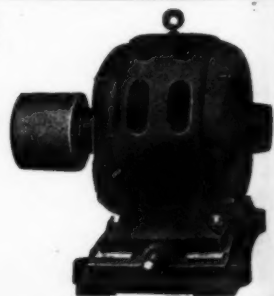
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means better work and more of it.

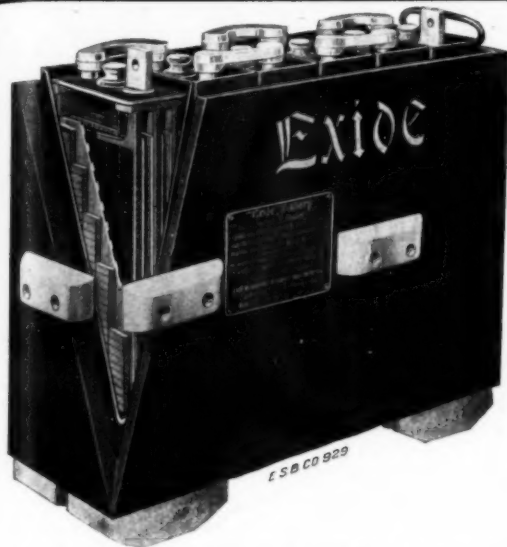
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THE TRIUMPH ELECTRIC CO.
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THE "Exide" BATTERY For Marine Wireless Service

The "Exide" Battery has been very widely adopted for use with wireless equipment as a source of energy in cases of emergency. Such service calls for an absolutely dependable battery.

The battery plates are assembled in rubber jars and the cells placed in trays containing five or six cells each. The trays are especially designed for service on shipboard and are fitted with lifting handles and with porcelain side insulators and porcelain skids. This Company has also designed a special charge and discharge control switchboard panel for use with wireless apparatus.

A new bulletin, No. 149, has just been issued which gives much valuable information on batteries for marine wireless service. A copy can be secured on request from the nearest Sales Office.

THE ELECTRIC STORAGE BATTERY CO.

1888

PHILADELPHIA, PA.

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Six Cells, Type PV-7 "Exide" Assembled in Tray, as Used for Wireless Service. Corner Cut Away to Show Construction.

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Can be attached to Locomotive.

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which is fine testimony for the Otis Heater. Within the last 23 years the Barber Asphalt Paving Company of New York City has installed forty heaters in their different Steam Plants. The Otis Heater saves the waste. That's the reason.

Names of other users and illustrated catalogue on request.

The Stewart Heater Co., 3 Norfolk Ave. Buffalo, N. Y.

Why they all want the BADGER Expansion Joint

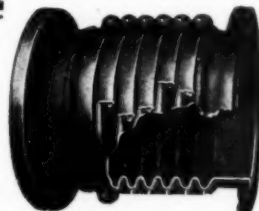
"Give me the expansion joint that won't take all my time for packing—one that won't give out just when everything goes wrong." —Engineer.

"What I want is an expansion joint that takes care of pipe changes at least cost." —Manager.

"The expansion joint for me sells readily because not too high priced, and has no 'come-backs' from customers." —Supply Man or Machinery Agent.

"What I want is an expansion joint that I can specify with absolute confidence in its capacity for taking up pipe changes, long life, and one that doesn't take up all the room in the power house." —Consulting Engineer.

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Inspects boilers and fly wheels to guard against explosion.

Insures property against this hazard.

Also against Life and injuries to persons.

Makes specifications for new steam plants.

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Alters old ones in the interest of economy.

Maintains over 200 inspectors throughout the country.

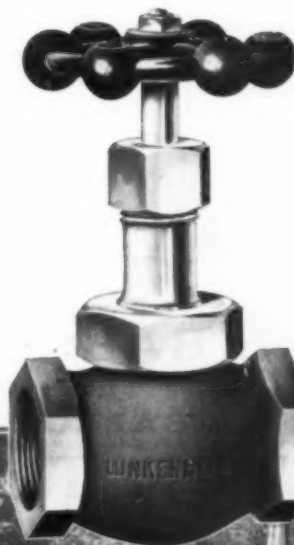
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THE LUNKENHEIMER CO.
"QUALITY"
CINCINNATI

Chief Advantages of the VOGT WATER TUBE BOILER



No flat stayed surfaces; no curved tubes; no multitude of hand hold plates; accessibility for cleaning and inspection; rapid circulation, both of water inside of tubes, as well as of the hot gases outside of tubes; complete combustion; dry steam; steadiness of Water Level; flexibility of construction; wrought steel construction throughout; safety, efficiency, durability.

Meets the demand for strictly safe, durable and efficient steam producer.

We want to answer your questions and also send our illustrated Catalogue.

Henry Vogt Machine Company
Louisville, Ky.

Keeler Water Tube Boiler

50 years of Boiler Building—
years without a shut down—
years without an explosion—

E. KEELER COMPANY

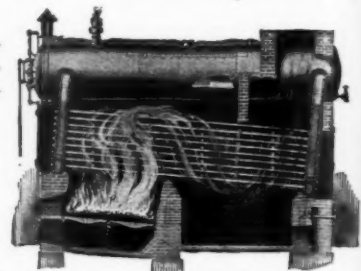
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in every style and for all purposes. Each and every one well proportioned for best economy of fuel, strength and durability. Full details in our catalog.

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Capacity 20,000,000 Per Year

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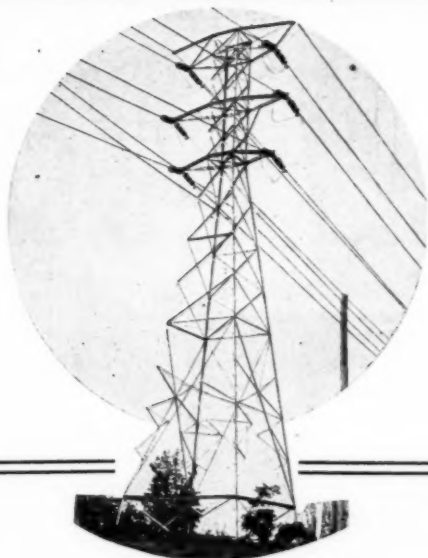
—BRANCH OFFICES—

Atlanta.....Candler Building
Boston.....35 Federal St.
Chicago.....Marquette Building
Cincinnati.....Traction Building

Cleveland.....New England Building
Denver.....435 Seventeenth St.
Havana, Cuba.....116 1/2 Calle de la Habana
Los Angeles.....American Bank Building

New Orleans.....Shubert Arcade
Philadelphia.....North American Building
Pittsburgh.....Farmers' Deposit Bank Building

Portland, Ore.....Wells-Fargo Building
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Reinforced Transmission Lines Railway Feeders

Bare and Insulated

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"Aluminum Electrical Conductors"
Tells You How to Get

Best Material
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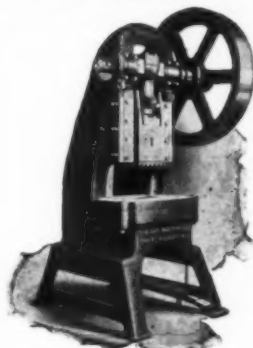
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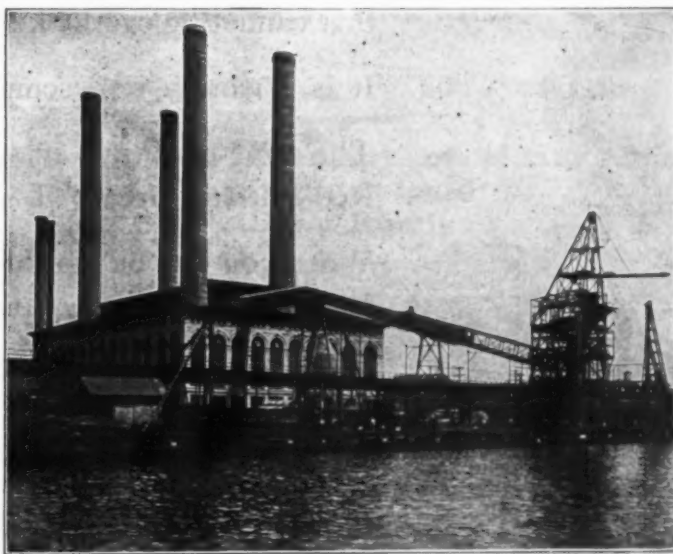


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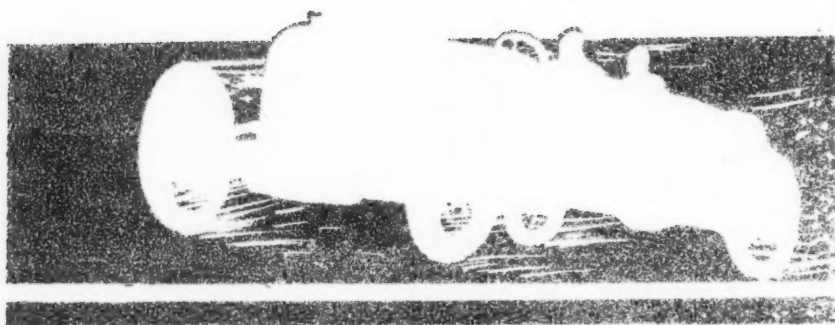
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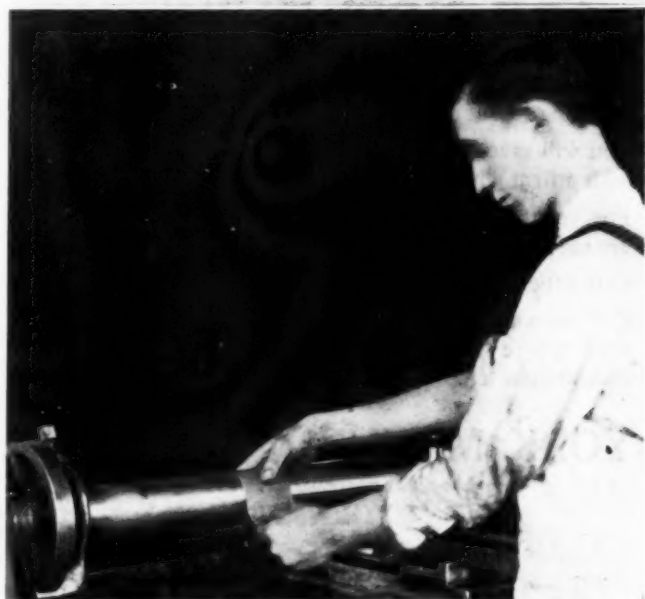
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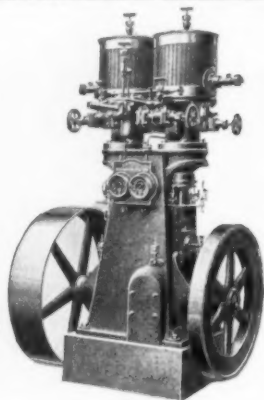
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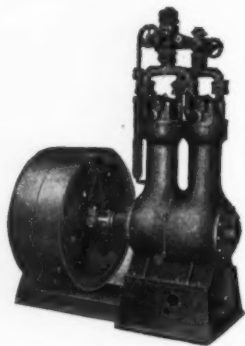
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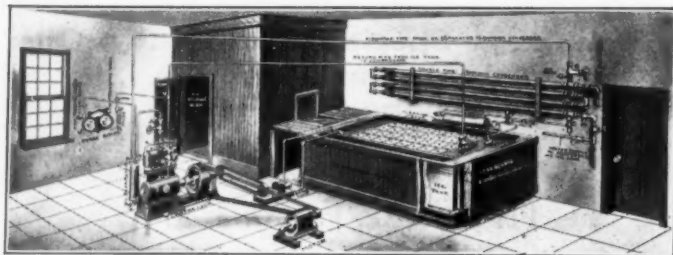
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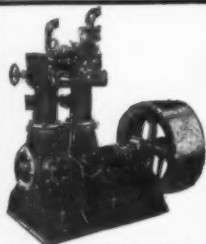
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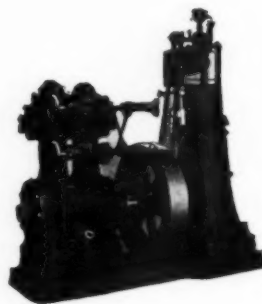
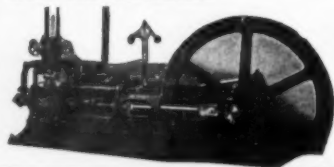
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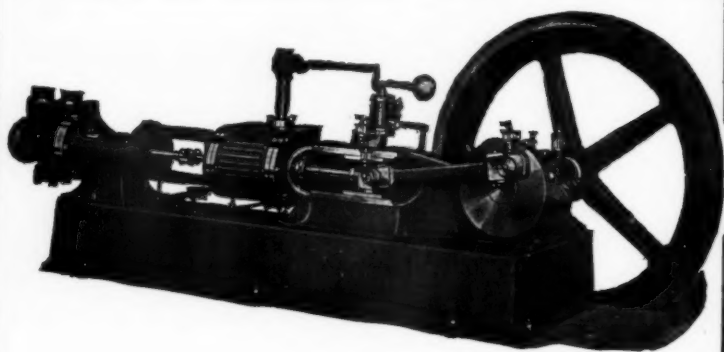
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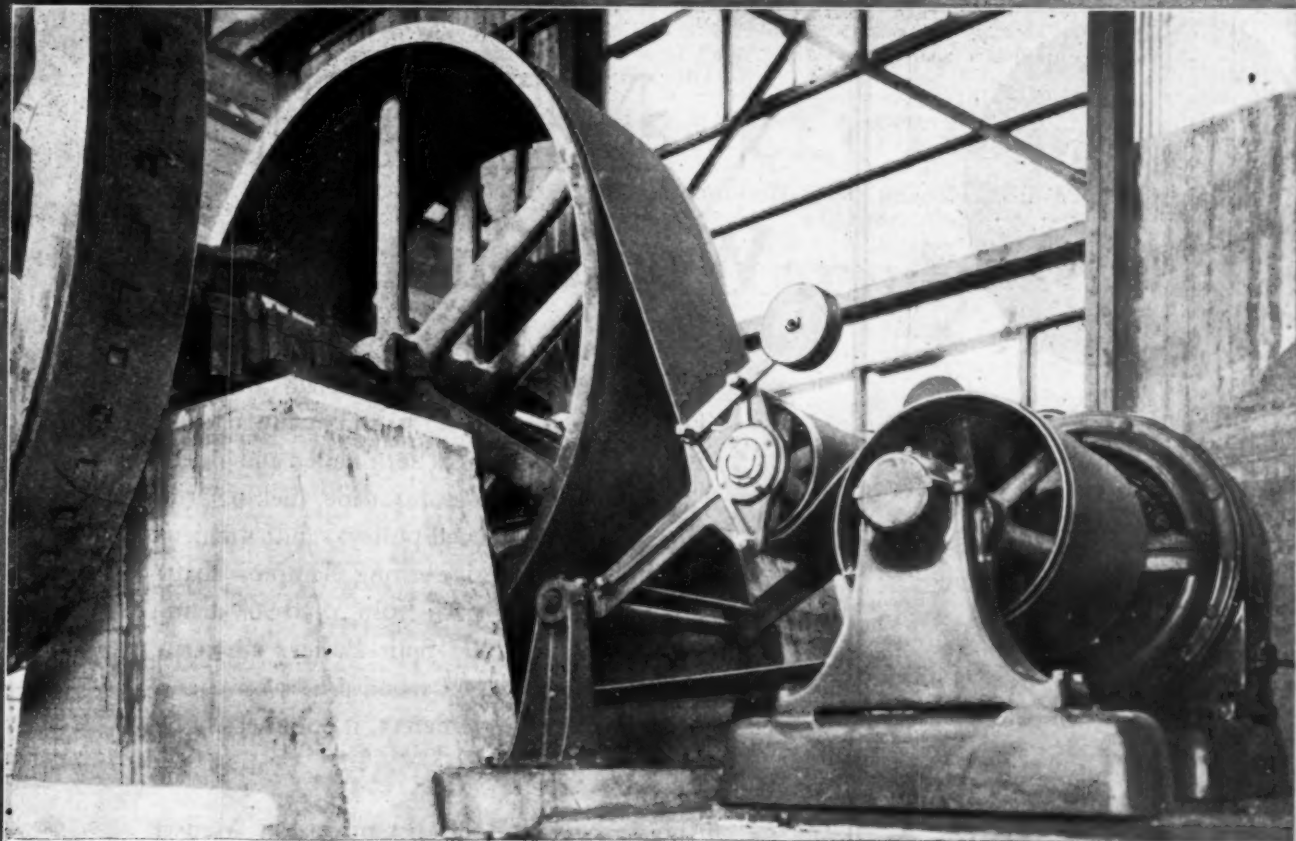
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You Can't Break the Back of a DUXBAK

TWO-THIRDS of each of these pulleys is in contact with this Duxbax Belt. Can you imagine any belt slipping, wound around pulleys like this? They can't. The Schieren's Duxbak Waterproof Leather Belting used in this Lenix Drive is double, is able to stand short-bends around the

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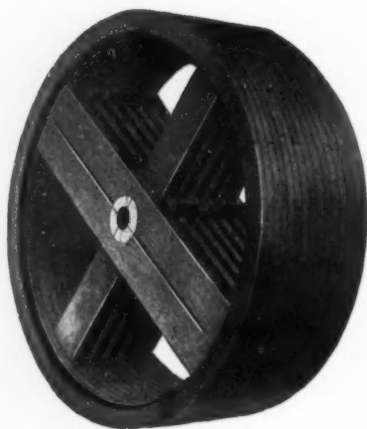
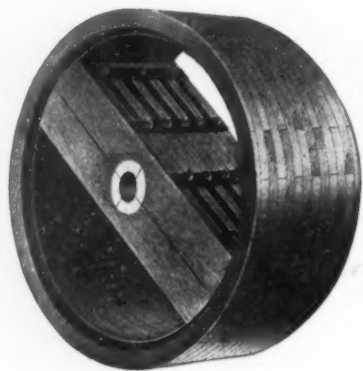


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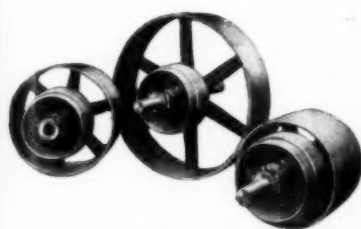
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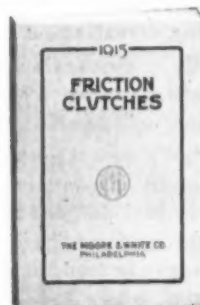
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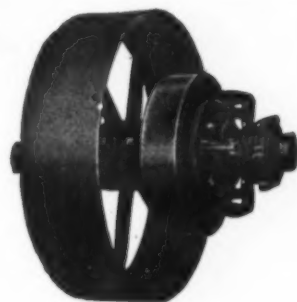


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some things worth knowing about it

❑ Cold Rolled Steel Shafting insures greater transmitting capacity than any other form of steel, relative diameter of shafting considered.

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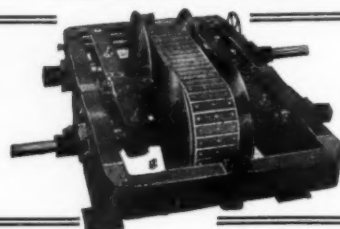
❑ If due care is exercised in the alignment of Cold Rolled Steel shafting, crystallization is practically eliminated.

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**The Reeves Way
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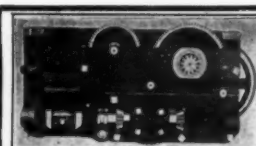
"THE REEVES" VARIABLE SPEED TRANSMISSION

Will positively save time, labor, trouble, power and expense. It eliminates waste and reduces manufacturing cost. These are facts proved by actual service in thousands of mills all over the world. Nearly every manufacturer needs it. Investigate today and start increasing your profits.

Full details in our illustrated catalog "K."
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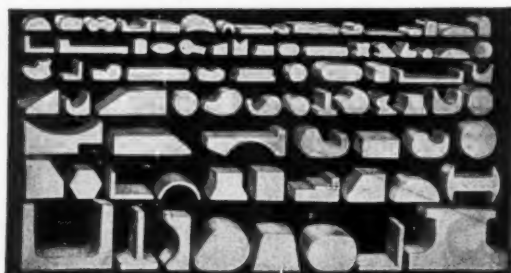
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ACCURATE — STRAIGHT — SUPERIOR FINISH
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Is the Continental Gin Co.

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And it takes Real Brains to run it.

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Then he ordered a sample machine.

Then he got some more.

And some more.

And is changing all the old elevators to the Steam Hydraulic as they have to be replaced.

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THEY ARE EQUIPPING IT THROUGHOUT WITH RIDGWAY ELEVATORS.

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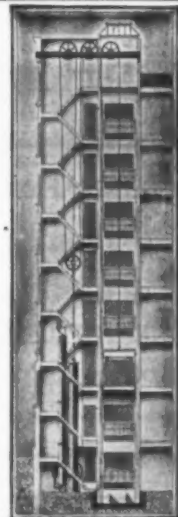


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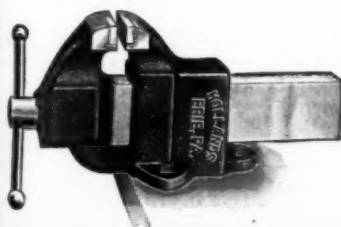
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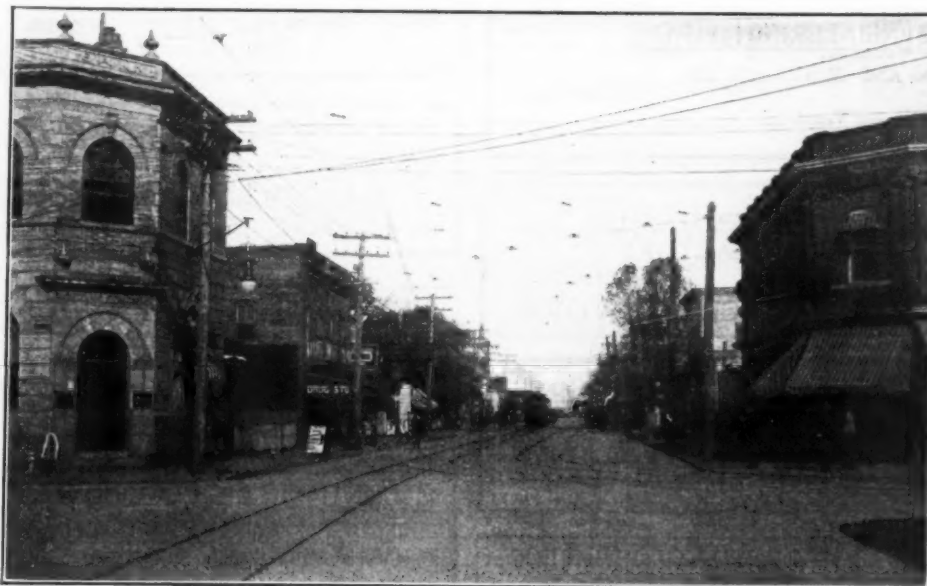
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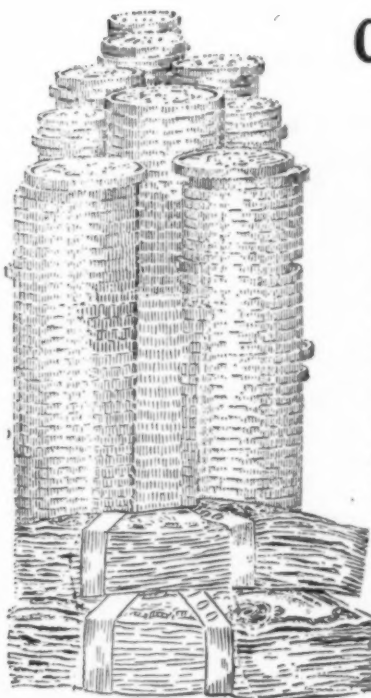
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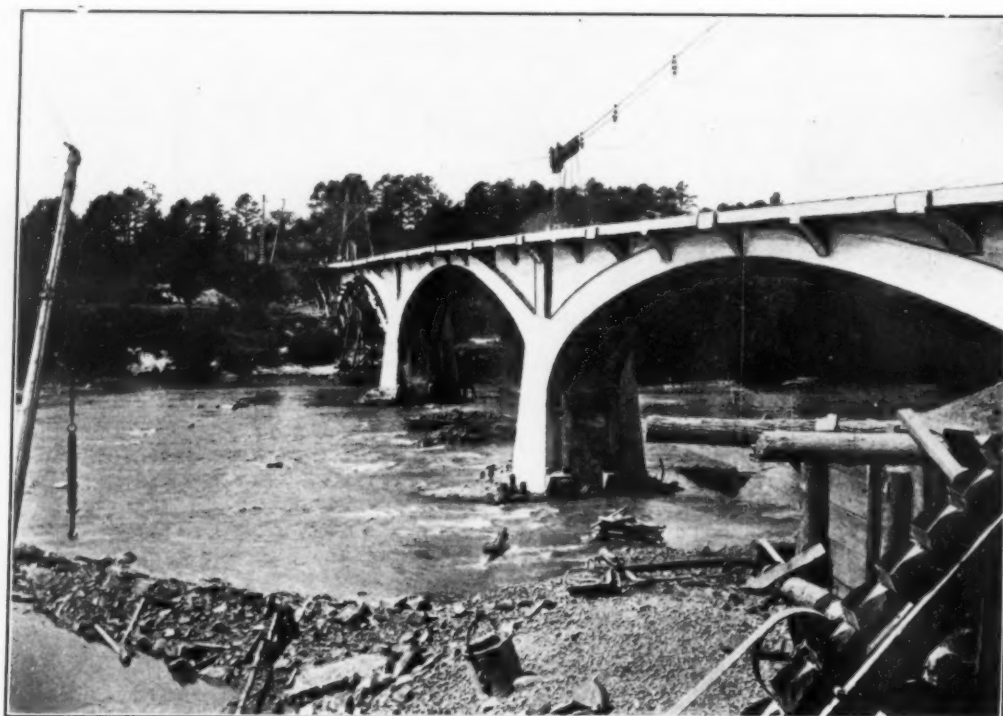


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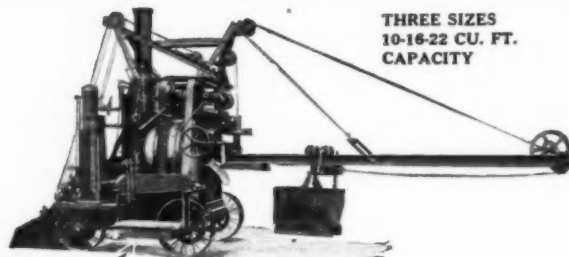
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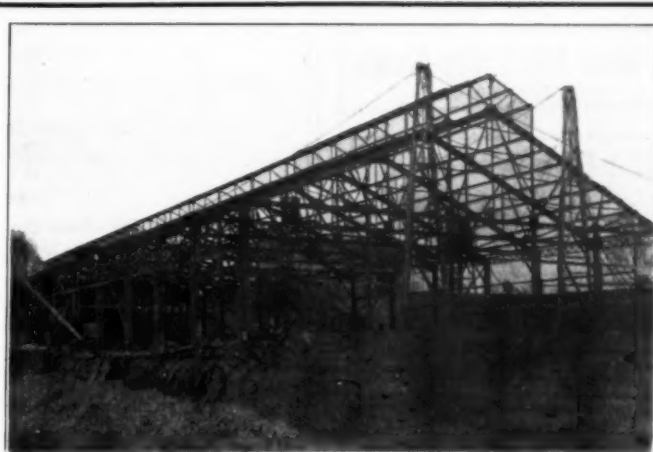
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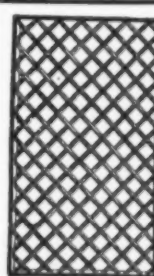
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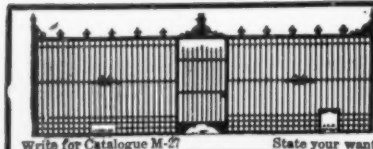
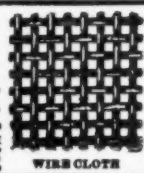
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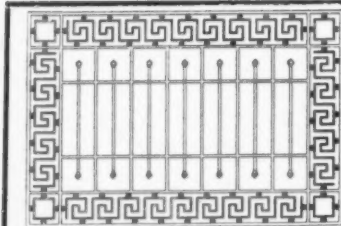
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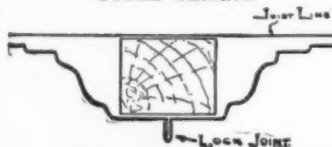
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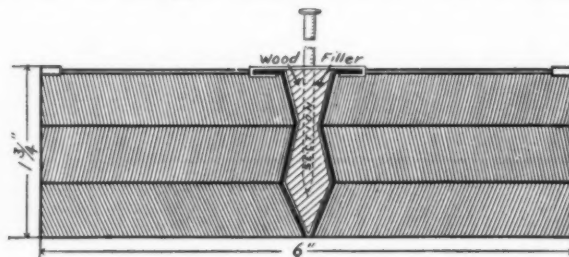
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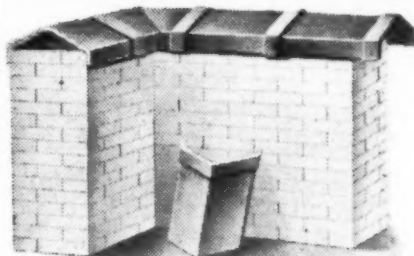


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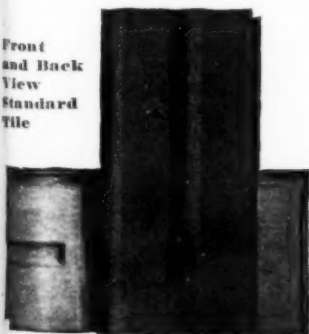
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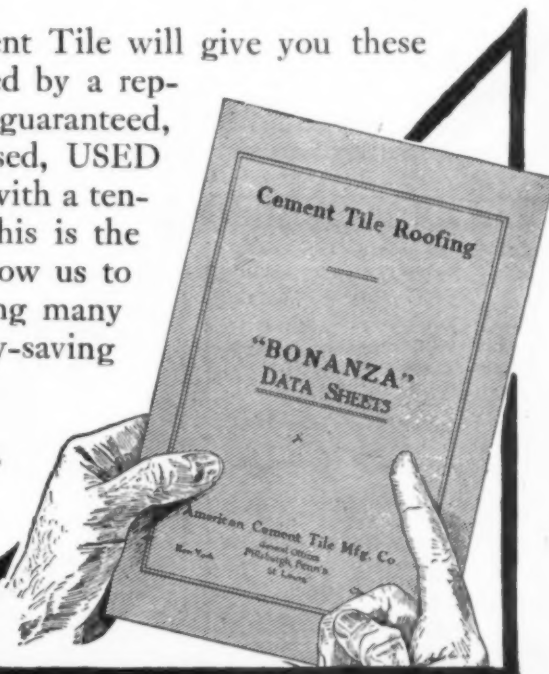
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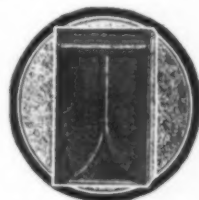
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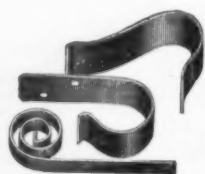
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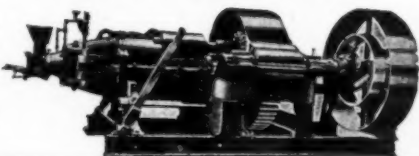
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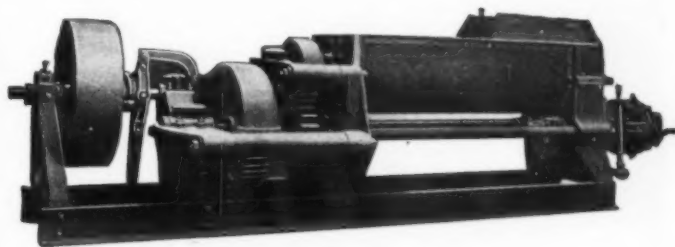
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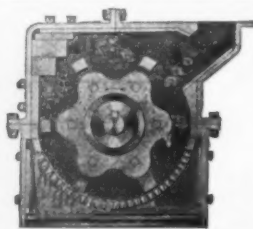
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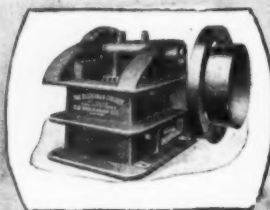
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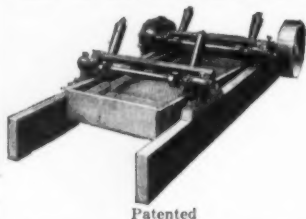
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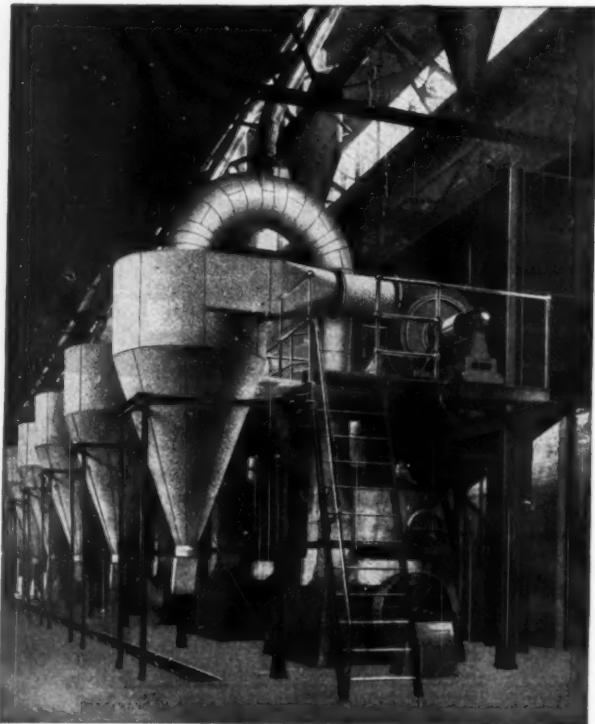
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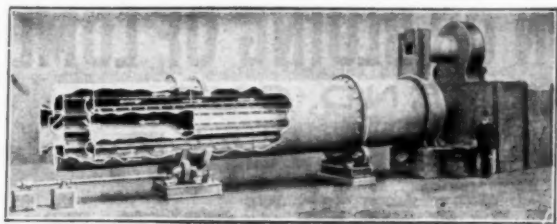
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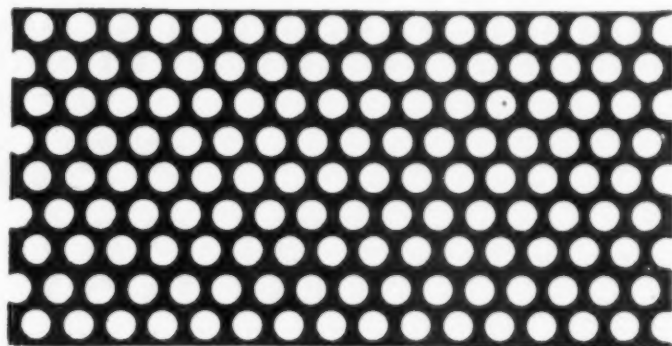
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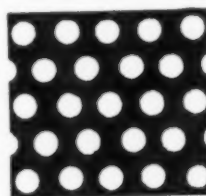
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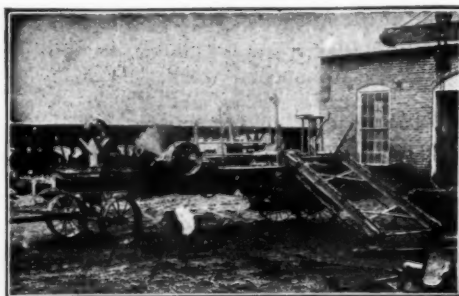
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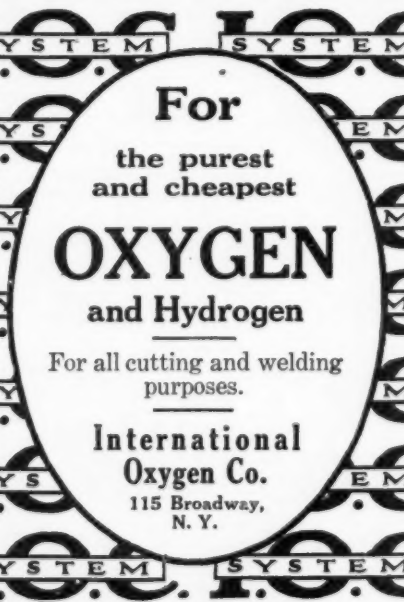
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Found the Man We Wanted

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BRISTOL, VA., May 8th, 1915

Manufacturers Record, Baltimore, Md.

Gentlemen:—

We want to tell you how much service your publication has given us:

Last Spring we had occasion to employ an office man who could invest some money in the business, and we inserted an ad. in your Classified Advertisements, making our wants known. We immediately began to receive letters from all over the U. S. and Canada. *We found the man we wanted in Denver, Col.,* and Mr. H. L. Wilson has been with us since the first of April, 1914.

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TWIN CITY BOILER AND SHEET IRON WORKS, INC.
I. G. TILLEY, Pres.

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Whether you are seeking a purchaser for your plant, city property, mineral, timber or farm land, etc., a new location for your factory or home, an investment of any kind, a position, agent, employe or partner, or whether you have an advertisement of interest to business men generally, you will find the classified columns of invaluable assistance.

This week the "Classified Opportunities" department is on pages 60 and 61.

For rates and conditions see block at head of department.

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RAILROAD AND MINING TIMBERS A SPECIALTY

General Offices—ELIZABETH, CALCASIEU PARISH LOUISIANA

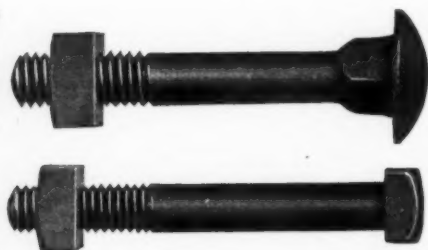
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A Saving That's Worth While

You can make a noticeable saving in the cost of assembling if bolts and nuts work smoothly. Upson carriage and machine bolts are uniformly accurate in heading, pointing and threading—no time lost in fussing with them.

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Our Southern Representatives, Messrs. V. A. Moore & Co., at Atlanta, are always at your service.

Write for catalog listing complete lines of nuts, bolts, rivets, etc.

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**THE
UPSON NUT CO.**
Bolts Nuts Rivets
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Malleable Iron Castings

of Highest Quality

Annual Capacity 25,000 Tons.

Castings of all descriptions furnished.

Send Blueprints or Samples for Estimates.

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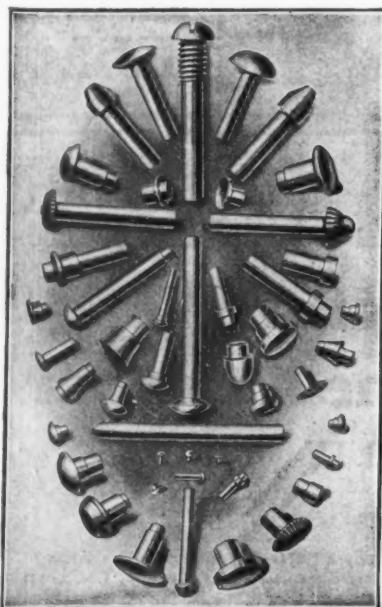
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We make a Specialty of Castings of All Kinds



Standard and Special Machine

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Special Screws and Rivets made to order. We please those discriminating manufacturers who require something better than is usually supplied.

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It pays to get the best. Sand economy comes only from sand quality.

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Established 1884

For 30 Years } **HILL** } has meant highest reputation in Foundry Supplies

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Steel Castings

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Quick deliveries.

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"SALAMANDRINE" STEEL POTS
for Lead, Annealing and Galvanizing

RAIL OR WATER
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MALLEABLE CASTINGS

SEND US YOUR INQUIRIES

WE POSITIVELY
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MALLEABLE IRON CASTINGS

High Tensile Strength Exceedingly Tough
We are equipped to make large and small castings.

Prompt Shipment Our Specialty

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GENERAL MALLEABLE COMPANY, Warren, Ohio

Reliance Crushers

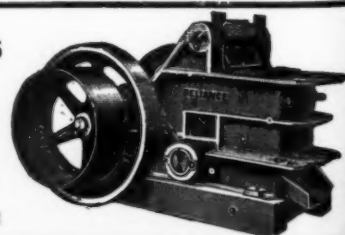
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will provide fresh air all over your plant—will keep rooms cool and well ventilated, will greatly increase the capacity of your working force. They pay for their original cost in a short time.

Bulletin 208-N will explain

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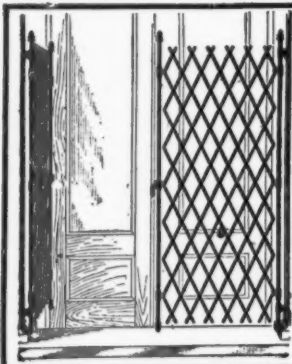
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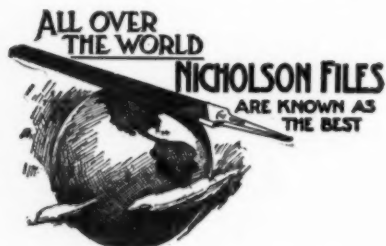
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Foundry and Machine Shops

GRAINGER & CO., Inc. ESTABLISHED 1833 Tenth St., Louisville, Ky.

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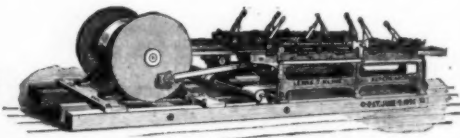
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The Kline 8 Block Will Do This for You

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They bear the label of the Underwriters' Laboratories, Inc., and are approved by the National Board of Fire Underwriters.

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A WEEKLY SOUTHERN INDUSTRIAL, RAILROAD AND FINANCIAL NEWSPAPER

Trade-Name Registered in the U. S. Patent Office

Vol. LVII, No. 26.
WEEKLY.

BALTIMORE, JULY 1, 1915.

\$4.00 A YEAR.
SINGLE COPIES, 15 CENTS.

PUBLISHED EVERY THURSDAY BY THE
MANUFACTURERS RECORD PUBLISHING CO.

RICHARD H. EDMONDS, Pres. VICTOR H. POWER, Treas.
FRANK GOULD, Vice-Pres. I. S. FIELD, Sec'y.

RICHARD H. EDMONDS, Editor and General Manager

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NEW YORK MONEY FOR MISSISSIPPI INVESTMENTS.

YAZOO delta levee bonds to the amount of \$100,000 have been sold to the New York Life Insurance Co. by W. P. Holland, president of the Planters' Bank of Clarksdale, Miss. This was the last block of an issue of \$1,000,000, all of which had been bought by the banking interests in Mississippi, of which Mr. Holland is the head, and \$900,000 of which had been sold by him locally and in Chicago. They are 5 per cent. serial bonds and begin to mature in ten years.

When levee bonds were first issued, a third of a century or so ago, investors showed the timidity usual in the case of a new form of security. In the course of time the soundness of the security came to be recognized by investors in the neighborhood, and for some years past it has not been unusual for some issues of levee bonds to command a premium. The market has been widening until investors elsewhere have come to regard levee bonds with favor. The present instance, however, marks the first investment by New York financiers in this form of security, which establishes a precedent that is regarded as significant and important.

The further favorable consideration of Southern securities by New York interests is indicated by the statement that farm mortgage loans are likely to be made in Mississippi by a New York life insurance company.

GREAT INCREASE IN EXPORTS OF AMERICAN COTTON MANUFACTURES.

EXPORTS of American cotton manufactures will exceed imports by about \$25,000,000 worth for the fiscal year 1915, the approximate figures being, exports, \$75,000,000; imports, \$50,000,000. With the exception of 1905, when there was an export balance of about \$1,000,000, this is the only time in the history of the country that the imports did not exceed the exports.

The Department of Commerce, in giving out these figures, notes that up to the present the cotton-manufacturing industry of the United States has been chiefly occupied in meeting the requirements of the home market. Thus while the production of cotton manufactures rose from \$268,000,000 in 1890 to \$628,400,000 in 1910, the last census year, exports of that class increased from \$10,000,000 to \$33,400,000. Imported cotton goods, however, did not fully participate in the increased consumption, since they only rose from \$29,900,000 in 1890 to \$66,500,000 in 1910, with a subsequent decline to about \$50,000,000 in the current year.

INDUSTRIAL DEVELOPMENTS TYPICAL OF THE SOUTH'S POTENTIALITIES.

IN the metropolitan district of Baltimore the capital invested in manufacturing is more than \$270,000,000 and the annual value of the products now exceeds \$350,000,000.

The magnitude of the value of this output can be better understood when it is remembered that it is equal to 58 per cent. of the value of the wheat crop of the entire country for 1913, raised on more than 50,000,000 acres of land (the year 1913 being used instead of 1914 in this comparison because of abnormal conditions produced by the war).

This annual value of Baltimore's manufactured products is equal to one-third of the total value of the most valuable cotton crop which the South has ever produced, raised on over 36,000,000 acres.

It is equal to nearly one-half of the annual value of the hay crop of the United States, raised on 48,000,000 acres of land.

What the South can do is typified in what Baltimore has done in the great development of its industrial interests and the remarkable municipal improvements which have created new conditions here, making certain industrial and commercial growth worthy of the natural advantages of the South, upon the development of which Baltimore is building.

Few cities in America have within the last ten years accomplished as much in laying a foundation for future advancement. During that time the city has built a sewerage system at a cost all told of over \$30,000,000; it has been repaving every street and alley at a cost of about \$14,000,000 or \$15,000,000; it is spending \$5,000,000 on the enlargement of its water supply and millions for other municipal improvements. Without the building of the sewerage system, the paving of the city, the enlargement of the water supply and kindred operations, Baltimore would have been up against a stone wall so far as further great progress was concerned. A "plant" for city expansion has now been created the effect of which during the coming years will be exceptionally great.

Baltimore has only begun to feel the influence for good in the expenditure of \$100,000,000 in betterments on the Baltimore & Ohio Railroad; indeed, these betterments might almost be called the reconstruction of the Baltimore & Ohio along modern scientific lines. The effect of this great expenditure and of the spirit which now controls the Baltimore & Ohio in its relation to Baltimore will be far-reaching in ways little dreamed of at present.

The change of the Western Maryland from a poorly-built and poorly-equipped local line to an important through road will likewise soon be showing itself in many directions in a very marked influence for the advancement of the city.

The Pennsylvania Railroad is beginning to wake up to the necessity of giving Baltimore facilities in keeping with a city which even now may be said to have in sight in 15 or 20 years a population of a million people, and these improvements, which economic conditions are forcing the Pennsylvania to provide, will be another factor in Baltimore's material advancement.

While considering the influence of these railroad expenditures made and to be made, it should be remembered that Baltimore has many unique enterprises of vast extent and importance, as well as its widely diversified industrial and commercial interests. It has no great overshadowing industry—such, for instance, as iron and steel in Pittsburgh—but it has a very wide diversity, covering almost every line of human activity. This is indicated in the fact

that this city has the largest iron and steel plant on tidewater in the United States; the largest copper-smelting plant in the country; the largest concern in America, doubtless in the world, making bottle-sealing devices, with earnings last year reported as equal to over 6 per cent. on \$30,000,000, though, of course, its capitalization does not run into such figures. It has what is said to be the largest sulphuric-acid plant in the country and the largest tin-decorating plant in the world. Baltimore controls the ownership of what is doubtless the largest and best coal properties owned in any one city in the world, having limitless possibilities for the development of coal mining and the shipment of coal through Baltimore to coastwise and foreign ports. This port is even now breaking all its past records in the exportation of coal.

Attention need not be called to the remarkable development of the clothing business in this city and the manufacture of white goods, as well as of ready-made suits, but it may be mentioned that one house here is said to be the largest producer of ready-made clothing in America.

We have merely referred to an item here and there in the city's industrial activities to indicate something of their diversity and of the magnitude of a few of the industries named. Many others of equal importance might be named. In the existence of these great industries and the wide diversity of small industries giving employment to women as well as to men there is the foundation for an industrial expansion which must inevitably produce some amazing results within the next decade or two.

This city has now reached a point where rapid expansion will be much more easily accomplished than the progress of late years. And yet since the fire of 1904 Baltimore has built within the city limits about 25,000 dwellings—a city in itself—and has expended in building operations between \$175,000,000 and \$200,000,000. If to this could be added the millions spent in suburban activities, the figures would be still more impressive. There are many places in the South where equally magnificent results relatively could be shown and still others where such things could be accomplished under the right kind of leadership.

PUBLIC SERVICE CORPORATIONS AND THE PUBLIC.

SOMEWHAT out of the ordinary was the recent publication in a Chicago newspaper of a full-page advertisement, prepared and paid for by an electric-power company, inviting manufacturers to locate within its territory. This kind of promotion is usually delegated to the local press or to the local publicity organization, and its cost is usually met by public subscription. But why should not public-utility concerns, and especially those that enjoy exceptional privileges, contribute liberally, in this and in other ways, toward the advancement of the communities from which they draw their sustenance, in which they earn their dividends?—Christian Science Monitor.

Not only is there no reason why public-service corporations should not contribute liberally toward the advancement of the communities in which they are located, but there is every reason why they should do so. In fact, every public-service corporation that fails to recognize its responsibility to the community and to its own stockholders by active co-operation in the upbuilding of its community is making a blunder which sooner or later will react upon it.

The manufacturer, the merchant or the banker can, if necessary, pick up and leave, carrying their business or their capital with them, but the public-service corporation is forever tied to the city in

which it is established. Its whole future depends upon the progress and prosperity of the community. It is more vitally interested in the advancement of the community than any other business organization there. It draws its life from the prosperity of the community. Unless the community prospers the public-service corporation is sooner or later doomed to failure. Every stockholder in such a corporation, it matters not where he may be located, has a direct personal interest in the progress of the community, and it is incumbent upon the corporation in the interest of its stockholders to be a leader in the work for the material upbuilding of the city. Every new enterprise established, every new man brought to the community—indeed, every progress of any kind which makes for material betterment—is of direct advantage to every stockholder in every public-service corporation.

There are some public-service corporations so wisely managed that these facts are appreciated, but a very large proportion of such organizations, or the managers of them, do not understand this situation and are not broad enough to recognize that expenditures for community development are essential to their own permanent welfare.

DIVERSIFYING AND DEVELOPING THE SOUTH'S FARM INTERESTS.

AS indicative of the trend in the South toward larger grain production, forced upon this section in part by the war conditions which so depressed the cotton trade, this year's oat crop exceeds last year's by over 51,000,000 bushels. The yield of wheat in the South promises to be only slightly in excess of last year, but the interesting feature of this is that in the central cotton States there has been a marked increase in wheat production, while in the States heretofore given largely to the raising of wheat, such as Kentucky, Maryland, Missouri and Tennessee, the yield, owing to weather conditions, is less than it was last year. Alabama, although its aggregate yield was only a little over 1,000,000 bushels, had a crop two and a half times as large as the preceding year. Georgia nearly doubled its wheat crop, advancing from 1,694,000 bushels to 3,279,000 bushels. North Carolina increased its production by 3,500,000 bushels, or more than the total yield of Georgia, the output in North Carolina being more than three times that of Georgia. Oklahoma's crop is reported as 1,400,000 bushels less than last year's. Oklahoma leads the South in wheat production, raising over one-fourth of the entire output of the South. South Carolina nearly trebled its production, while Texas made an increase of 6,400,000 bushels, and Virginia 3,100,000 bushels.

The accompanying table shows the production by States as compared with last year:

Wheat, Bushels.		
States.	1915.	1914.
Alabama	1,031,000	403,000
Arkansas	2,130,000	1,625,000
Florida .....	.....	.....
Georgia	3,279,000	1,694,000
Kentucky	8,931,000	12,540,000
Louisiana .....	.....	.....
Maryland	9,432,000	13,158,000
Mississippi	27,000	13,000
Missouri	37,408,000	43,333,000
North Carolina	10,810,000	7,333,000
Oklahoma	46,555,000	47,975,000
South Carolina	2,608,000	920,000
Tennessee	8,663,000	11,100,000
Texas	20,743,000	14,066,000
Virginia	14,418,000	11,296,000
West Virginia	3,440,000	3,540,000
Total	169,475,000	169,056,000
United States	949,013,000	891,017,000

These figures, compiled from reports of the United States Department of Agriculture, credit Mississippi with only 27,000 bushels of wheat for the year, whereas Mr. W. P. Holland, a banker of Clarksdale, Miss., in an interview is quoted as stating that the Yazoo Delta planters alone of Mississippi had about 10,000 acres in wheat, which yielded an average of 25 to 35 bushels an acre. According to his figures the crop of that State was about ten times as large

as the estimate of the United States Department of Agriculture. Louisiana appears in this report of the Department of Agriculture as having raised no wheat, but there has been a small production in that State, and shipments have been made of Louisiana wheat for the first time to the St. Louis market.

It is estimated that the total production of wheat for the United States will be nearly 950,000,000 bushels, or a gain of nearly 60,000,000 bushels over the production of 1914.

The production of oats in the South, an essentially important crop for livestock feeding, is as follows:

Oats, Bushels.		
States.	1915.	1914.
Alabama	8,845,000	8,580,000
Arkansas	7,826,000	6,240,000
Florida	1,072,000	900,000
Georgia	16,416,000	9,000,000
Kentucky	4,009,000	3,075,000
Louisiana	2,058,000	1,610,000
Maryland	1,316,000	1,161,000
Mississippi	3,555,000	3,680,000
Missouri	32,694,000	25,800,000
North Carolina	4,851,000	4,375,000
Oklahoma	41,738,000	30,250,000
South Carolina	10,374,000	7,500,000
Tennessee	7,333,000	8,050,000
Texas	40,818,000	22,500,000
Virginia	3,861,000	2,900,000
West Virginia	2,686,000	2,100,000
Total	189,452,000	138,381,000
United States	1,287,854,000	1,141,060,000

These figures show a gain in every State except Mississippi and Tennessee, Georgia having an increase of over 7,000,000 bushels, Missouri 7,100,000 bushels, Oklahoma 11,000,000 bushels, South Carolina 2,800,000 bushels, and Texas 18,000,000 bushels, these being the largest gains reported. The gain in the production of oats in the South is over 36 per cent.

HOUSTON AS A SEAPORT.

HOUSTON, TEX., announces that it is now ready to receive ships from the high seas. The ship channel has been dredged to a depth of 25 feet, minimum, from the turning basin to the Gulf of Mexico, a distance of fifty miles, and the first unit of the municipally-owned wharves has been completed. Other units will be added as the needs of commerce require, a fund of \$3,000,000 having been secured through a recent issue of bonds for the construction of wharves, sheds, tracks and every feature of a most modern port. As occasion arises the depth and width of the channel will be increased and the turning basin will be enlarged, in accordance with the plans that have been worked out by the Board of Port Commissioners and the engineers after much study and the examination of port facilities elsewhere.

By this achievement the South adds a new potentiality to the country's list of ports. It is interesting as a feat accomplished by an energetic, enterprising citizenship, without whose aid, financially and otherwise, the work would have required many more years to complete. It is also of broad and permanent interest that here is the beginning of a port development, the importance of which no man can foresee.

With the suction dredge and the steam shovel well-nigh all things are possible. The man-made harbors of Hamburg, Manchester and others in Europe and our own Culebra cut at Panama are illustrations of this fact. In digging out the harbor of Hamburg in its completed form \$130,000,000 was expended. To create an even greater world harbor at Houston would require a much smaller sum than this. With a vastly richer territory to draw from, Houston could in time far surpass the German port in amount of commerce handled.

Houston is the farthest inland harbor on the American continent. It is the seaport nearest the great wheat, corn, livestock and cotton producing territory of the nation, and is nearer by 500 to 700 miles to the great grain-growing States of the West than are the Eastern Atlantic seaports.

These facts would indicate that a beginning has been made at Houston in the development of a port that must become one of the great seaports of the world.

GREAT INCREASE IN COAL SHIPMENTS.

UNPRECEDENTED shipments of coal to foreign countries are now being made through ports of the Atlantic seaboard. These exports of the bituminous product—the kind of fuel which is going out—displayed signs of increasing in the latter months of 1914, but since the beginning of the calendar year they have shown such notable gains over former years as to surprise students of commerce. Shipping merchants are working overtime on week days, and even on Sundays in some instances, to meet the necessities for expeditious handling of vessels and their dispatch with cargoes.

War conditions in Europe have caused tremendous demands for American coal, and especially since Italy entered the conflict of Powers. England and Germany are great producers of coal, and Italian railroads obtained their fuel from them. Consequently out of forty steamships which left the port of Baltimore during the month of May laden with coal, eighteen of them were bound for Italy, with average cargoes of 5450 tons of coal, the smallest cargo being 4000 tons and the largest 6780. Two cargoes also went to France and two to Egypt, making twenty steamships in one month carrying coal out of one American port to the other side of the Atlantic.

So great is the demand for coal that everything in the way of a steamer which is capable of a transatlantic voyage is pressed into service. Ocean rates are consequently high as compared with normal times, although recently there has been some reaction from the highest figures.

The magnitude of the coal exports is shown by the total for May out of Baltimore, Hampton Roads and Philadelphia, which amounted to more than 780,000 tons. This is an increase over April of about 43,000 tons. June has shown proportionate gains over the May total.

At Baltimore the gain has been especially notable and significant. Exports for May from this port were 232,866 tons, compared with 80,124 tons for May of last year, an increase of 152,742 tons, or nearly 300 per cent.

Not all of the gains in coal exports are on business to Europe and Africa. Next to Italy, Argentina was the largest taker of coal out of Baltimore in May, the former getting more than 98,000 tons and the latter nearly 56,000 tons, although Argentina formerly bought heavily from Europe.

The belief that the war in Europe has permanently changed the fuel markets of the world and that the United States will hold a large share of the new business now carried on is reflected in the extension of port facilities for coal handling now under way, notably the recent announcement by the Pennsylvania Railroad that \$1,000,000 will be expended on a new coal-handling pier at Baltimore.

A BRANCH RESERVE BANK FOR NEW ORLEANS.

THE establishment of a branch reserve bank at New Orleans, as announced by the Federal Reserve Board, and the operation of the institution will be observed with particular interest by financial men. Information from Washington says that the bank will operate only for the discount and purchase of commercial paper and acceptances, and also for clearing, collection and exchange transactions and transfers of funds. The other functions of a Federal reserve bank will continue to be performed by the Atlanta Reserve Bank, of which the New Orleans concern will be a branch. The latter will have assigned to it member banks of the Federal reserve system in Louisiana, Mississippi and part of Alabama. They will deal with the New Orleans branch, which will report its operations to the main bank of the district at Atlanta.

It is not expected that any other branch reserve bank will be established until the New Orleans institution has been conducting operations for some time, as it will be more or less experimental, and only experience can demonstrate the most satisfactory method of conducting it with relation to the other parts of the Federal reserve system.

North Carolina Points the Way for Home Development

[Special Dispatch to Manufacturers Record.]

Raleigh, N. C., June 29.

The North Carolina State Bureau of Publicity was formally organized here today by 80 representative business men, representing 36 cities and towns, for the development of the agricultural and industrial interests of the State. The officers chosen are: President, Henry A. Page of Aberdeen; vice-presidents, Eugene C. Branson, A. E. Tate, O. L. Joyner, Clarence Poe, Frank R. Hewitt and A. W. McLean; secretary, J. C. Forrester of Greensboro; treasurer, Alfred A. Thompson of Raleigh.

There was entire unanimity of action. President Edward K. Graham of the University of North Carolina presided. J. C. Forrester was secretary. Mr. Forrester, called on to state the object of the meeting, said it was to do something for North Carolina, to plan what is best to be done, to take steps to correct things needing correction and do things that should be done on a common ground on which all really progressive men can get together; to advertise the State's great advantages and resources. He said the meeting was called by 26 representative North Carolinians and 26,000 would willingly have signed the call, while Governor Craig and all the newspapers and leading commercial organization had endorsed it. North Carolina has not kept up with other States in the Southeast; its increase of white population is less than in any of them, and it had suffered enormous loss of population by removal. Thoughtful men for years have recognized the supreme necessity of co-operation to remedy these evils. This meeting is merely a crystallization of this thought into a plan and purpose. Thinking men see a way to correct these evils through truthful publicity. There is a woeful lack of information about North Carolina in other States, and there is no agency to tell of its good things, while there are agencies which disseminate news of the other sort. He declared unfavorable statements regarding its child labor to be untruthful. The percentage of school attendance here is greater than in many large cities. Advertising its advantages is North Carolina's supreme need. No State has such a small percentage of population born elsewhere—only 5 per cent., against 35 in Florida, 28 in Texas and 70 in Washington, all of which States are persistent advertisers. Success depended upon quick and spontaneous action by this notable gathering to develop the State-wide exploiting of North Carolina, which it has never had.

President Graham said the State must be aroused to State-wide action and thought along every line. Its weakness has been division into communities. It has lacked a united State spirit. The biggest idea behind this meeting is that North Carolina is a great State. He believed a State Chamber of Commerce could improve conditions in every line. He suggested a Chamber of Commerce in every county, to improve conditions of living, county chambers to form the basis for a State Chamber of Commerce.

Delegate after delegate rose and declared his town or county would do its part. A committee was appointed to draft a plan of organization and suggest officers, R. C. Hood, Clarence Poe, Henry A. Page, Hugh MacRae and Bion H. Butler composing it; Clyde L. Davis, secretary.

The Sand Hill Board of Trade, embracing 18 towns, was called on, and told of the interesting things it had done. It had succeeded in uniting thoroughly the communities which compose it, and had given them the benefits of the best advertising.

This was declared by President Graham to be one of the most successful development movements in the South. Mr. Davis urged that the organization formed today give opportunities for cities and towns to come into the scheme, and he by authority pledged his organization for \$250 a year for the next two years.

Talks were made by agricultural and industrial agents, Z. P. Smith of the Southern Railway, J. A. Pride, Seaboard Air Line; G. H. Cardwell, Atlantic Coast Line, and B. E. Rice, Norfolk Southern, in which they pledged hearty co-operation and said they found North Carolina a most remarkable State as to its resources. None offered such a great variety of exhibits in shows which they yearly make in the North and West. They saw in today's splendid meeting all signs of success.

The committee on organization reported through Clarence Poe the following plan:

First, to study the needs of the State by sections.

Second, to secure and create such publicity as will promote the development of the State by bringing people here of thrift and industry, especially such as will locate on agricultural lands.

Third, to acquaint the people in one section of the State with the advantages and progress in other sections.

Fourth, to aid in offering homes at fair and reasonable prices and protect prospective settlers from unjust speculation and false representations.

Fifth, to assist each section in securing a class of settlers suitable to that locality.

Sixth, to co-operate with local commercial, agricultural and civic organizations, railroads and any other organizations, corporations or individuals in promoting the purposes above set forth.

For an organization name the North Carolina State Bureau of Publicity was chosen. Any person, firm or corporation, chamber of commerce or merchants' association is eligible to membership. There shall be a board of directors of not over three, chosen by each congressional district, this board to elect officers. The first annual meeting is to be held in October. Each county to be urged to take membership and form a strong organization, subsidiary to the State organization.

Hugh MacRae, presiding at the close of the meeting, said it had a State-wide purpose and meant something, for it showed by the splendid personnel of the meeting that North Carolina was ripe for a great movement of this kind. The psychological moment had arrived, and he saw a splendid determination to do great things.

The meeting then adjourned, leaving further details of the organization to the executive committee.

Basis for North Carolina's Progress.

[Special Correspondence Manufacturers Record.]

Raleigh, N. C., June 28.

North Carolina has called all its people to rally here at the State capital to launch a great movement to set before the world the attractions, the merits and the advantages of this historic Commonwealth, wherein was the earliest of all the English settlements in America. The object of the movement is a State-wide organization to collect accurate information regarding the State's resources and distribute it everywhere, not only to win back people who have left North Carolina, but to attract new ones to an environment that is superior to their own.

Long before the war between the States there were great movements of North Carolinians to States farther south, then across the Mississippi into Texas, and to the West and Northwest. Probably more than half a million people left North Carolina between 1781 and 1861. The movement was resumed as soon as the war ended, and it is estimated that at least a quarter of a million able-bodied men left the State between 1865 and 1900, for not until the latter year was the movement checked. Now more are coming into the State than are going out; many who went far afield have returned, and others are moving in because of the many attractions and advantages the State is found to possess.

Not until now has there been an organized movement for the systematic exploiting of North Carolina. A new leaf has been turned and people from every part of the State are behind the plan to lay the foundation for a most comprehensive home development campaign. It is proposed that the world shall know of the richness of North Carolina's resources in lands, minerals, timber and seacoast; of her agricultural, horticultural and industrial opportunities; of her varied attractions of climate and of the high standard of living to which the people have attained.

And what an appeal the old North State makes! In no State in the Union is there so wide a diversification of crops as in North Carolina. Between the truck farms of the East and the apple orchards of the West there are lands adapted to the crops of every clime. Whatever a man prefers to raise he will find soil and

climate to meet his desires. From the sub-tropical lower coast to the exalted heights of the mountains on the west, the climate ranges from that of North Florida to that of Maine, and here can be raised all the products of the country that lies between Florida and Maine.

According to the altitude and the soil, there may be raised berries, truck, apples, cherries and other fruit; cotton, flax, millet, alfalfa, corn, wheat, oats, rye, barley, buckwheat, tobacco, peanuts, sweet potatoes, Irish potatoes and scores of other crops. Livestock thrives in every part, and especially in the Piedmont section and on the table lands.

More than three-fifths of North Carolina may be termed two-crop territory. Here the open winters permit of outdoor work throughout a large portion of the entire year. With two crops a year the product per acre can be made to much more than double that in less favored sections.

In the mountains on the west are many peaks taller than in any other range east of the Rocky Mountains. On their heavily timbered slopes are the sources of numerous streams, which, in their course to the ocean or the Gulf, give water-power for electrical development on a scale that no other State in the South can surpass.

The entire mountain region is one vast natural sanitarium. Much frequented now by summer and winter visitors from many other States, it is certain to be occupied to a vastly greater extent when its healthfulness and its picturesqueness are more universally known.

The long shore line, the great stretch of navigable waters and the inland waterway are of vast importance in the development of the State, and on the coast and in the sounds are great riches in the abundant oysters and fish.

North Carolina is a well-ordered State, and it is pushing vigorously for the improvement of physical, mental and moral conditions by building more than one public school every day in the year; by constructing public roads of the best type and by looking broadly after the public health. Its technical training for the factory of every sort, public engineering and agriculture, is among the best in the country; its industries have been pushed to such an extent that it has more textile mills than any other State in the Union and ranks next to Massachusetts in total production.

In the matter of good roads, it will be found that sixty of the hundred counties spent somewhat over \$5,000,000, of which nearly half was from bond issues and a little less than a third from special taxes. The total value of convict labor, which is so largely used in road construction, was \$360,000, and that of free labor, \$800,000. The people also directly contributed \$100,000 by private subscription, bringing the total up to \$5,160,000. For the current year even bigger things are being done, \$5,000,000 being available from special taxes and bond issues, while the 2000 county convicts' work on the roads has a value of \$400,000, and \$800,000 is estimated as the value of free labor; the private subscriptions so far total \$50,000, bringing the grand total to \$6,250,000.

The public school fund this year is \$7,000,000, showing an increase of more than \$3,000,000 as compared with two years ago, and during the past two years 810 new rural schoolhouses have been built according to modern designs. During the past twelve years, with their total of 4383 days, no fewer than 4475 new schoolhouses in the State have been built anew or rebuilt within that period. The value of public school property is \$10,000,000, of which nearly three-fifths is of rural schools. There are 212 high schools, and there are great training colleges for women maintained by the State, and for men the University of North Carolina and the Agricultural and Mechanical Colleges, which afford training for the industries of the factory and the farm.

The railways are playing a large part in the development of North Carolina, and they are being pushed into undeveloped regions now. In a few months two important roads, both State aided and built by State convicts, will climb over the Blue Ridge and into some of the finest fruit and cattle country, not to speak of grain, there is in all the United States.

FRED A. OLDS.

Where 13,000 Men Are Working in and on the Du Pont Company's Virginia Powder Plant

By HOWARD L. CLARK.

[The E. I. du Pont de Nemours Powder Co. is spending millions of dollars in building a great plant on deep water near City Point, Va., which is resulting in town booming activities in the neighborhood and in great business improvement throughout that section.—ED. MANUFACTURERS RECORD.]

Virginia is again being invaded, not by an army of destruction, as of '61-'65, but by thousands of workmen who are changing bare fields and scraggy woods into a hive of industrial activity. War laid waste the greater part of the Richmond-Petersburg section, and war is now indirectly acting the part of a benefactor to this same locality. Millions of dollars, variously estimated at from \$5,000,000 to \$10,000,000, have been poured into this region in the last six months by the E. I. du Pont de Nemours Powder Co. of Wilmington, Del., which is constructing a large plant near City Point, about 10 miles northeast of Petersburg.

About three years ago the du Ponts, in seeking a protected location in the South for a powder plant, and at the same time one having ample water and rail facilities, purchased approximately 1800 acres lying in the angle formed by the junction of the Appomattox and James rivers and extending back to the tracks of the City Point and Petersburg branch of the Norfolk & Western Railroad. Construction work was started, but after a short while abandoned, and the plan for erecting a factory at this point was not carried out until last fall, when the increasing orders of the company necessitated enlarged manufacturing facilities. At that time 400 acres additional were acquired and work started on an immense plant, which is being constructed in several different units, for the manufacture of guncotton, sulphuric and nitric acids.

Several times in the past few months the MANUFACTURERS RECORD has mentioned this great undertaking, but as the company refuses to give out any statement and as the plant is closely guarded, newspaper men being barred absolutely, no authentic information regarding the development can be secured. Nevertheless, it is generally known here that the company has erected two units, known as "A" and "B," which are now in operation, and that foundations for a third are under way. It is said the new unit will have a capacity of double the previous units. Ten miles of railroad siding are required by the plant to take care of the 100 to 200 cars handled daily for the company. It is reported on good authority that 50 carloads of guncotton are shipped daily, and that within 60 to 90 days this amount will probably be increased to 100 cars, in addition to a large quantity of nitric acid. Building and manufacturing

cluding the water-front as well as the land side, shuts out the public, and several hundred mounted watchmen guard the property so that no one is admitted except the workmen and those connected with the building or operation of the plant.

While the du Pont company has large foreign contracts for explosives, it is rumored that most of the materials produced at City Point is taken by the United

States Government after it is sent to the company's main plant at Wilmington and manufactured into munitions of war. This rumor is generally believed by the local people, and one of the county officials stated that Uncle Sam is going to take charge of guarding the plant on July 1 and place about 300 soldiers there for that purpose, relieving the county police and private watchmen employed by the company, but no confirmation of this rumor can be secured.

Construction work is carried on by over 10,000 men, including Hungarians, Italians, Greeks, negroes and hundreds of the native whites of that region, while probably 3000 more are now engaged in the operating departments of the finished units of the plant, and the company is still taking on workmen at the rate of about 50 a day. Laborers, chemists and men familiar with the manufacture of explosives are still in demand. The monthly pay-roll, according to reports in Petersburg financial circles, exceeds \$800,000, this amount, so it is stated, being put out through Petersburg banks.

Following in the wake of the du Pont development, land values increased enormously in the vicinity of City

Point. For a mile to a mile and a half surrounding the du Pont holdings, property has been bought by land companies, and they are selling lot subdivisions at the rate of from \$3000 to \$5000 an acre.

Some of the wild real estate deals that were experienced during the boom days in the West and the South 25 years ago and often seen in mining and oil regions of the West, are being duplicated here. Town lots are sold and resold at increasing figures. Two lots, which were purchased at \$200 each, were sold a week later for \$400 each, and two days after the new owner refused \$500 for one of them. At a lot sale last Friday a corner lot brought \$1200; the buyer immediately leased it at \$50 a month for three years to a Greek who wanted to construct a two-story house to be used for lodging purposes and as a restaurant. In many instances as soon as buildings are planned space is rented from the blueprints.

In addition to the great growth of the village of City Point, several townships have sprung up in the vicinity of the du Pont plant. In these, streets have been opened, sidewalks, sewers and water mains laid, and in the last three months over 400 houses, most of them five and six-room cottages, costing on the average \$800 to \$1000 each, have been erected and hundreds of others are now under construction or contemplated.

It is true that great numbers of the first buildings were practically frame sheds, but the buildings now under construction are of a more substantial character. As the problem of housing is being solved, the families of workmen are arriving, and with their coming the present estimated population of 16,000 may be materially increased.

Many are asking the question whether this is to be a permanent development. The only answer that can be given is that it is not likely that, after spending many millions in building such a gigantic plant, the du Pont company will lessen its activities at this point. When the plant has been fully completed most of the 10,000 laborers now reported as being engaged on construction work will not be needed; on the other hand, the number of men required to operate the full plant will be much larger than the number thus employed at present. Moreover, as dwellings are provided, these men will be able to bring their families. Few women are to be seen in this



FRAME, TAR-PAPER COVERED BUNK HOUSES OF THE DU PONT COMPANY, AND STACKS OF UNIT "A" SHOWING IN THE BACKGROUND.



DIGGING FOUNDATIONS FOR THE FIRST BANK AT HOPEWELL.



INTERSECTION OF HOPEWELL AVE. AND "THE MIDWAY," HOPEWELL.

operations are carried on day and night, seven days a week, and while the employees have to work hard, the scale of wages received in all branches of the work is considerably higher than paid ordinarily for such purposes. Wire fencing around the entire property, in-

Point. Most of the du Pont property was purchased at from \$15 to \$40 an acre, but as the building operations gradually increased, the army of men grew and the price of land went to \$100, \$200 then \$1000 an acre, and only a day or two ago an offer of \$1500 an acre for a farm

motley throng at present, as the accommodations for them are limited.

Thousands of men are at work building stores, hotels, theaters, etc., meanwhile sleeping in tents or going to Petersburg, 10 miles away, and some even as far as

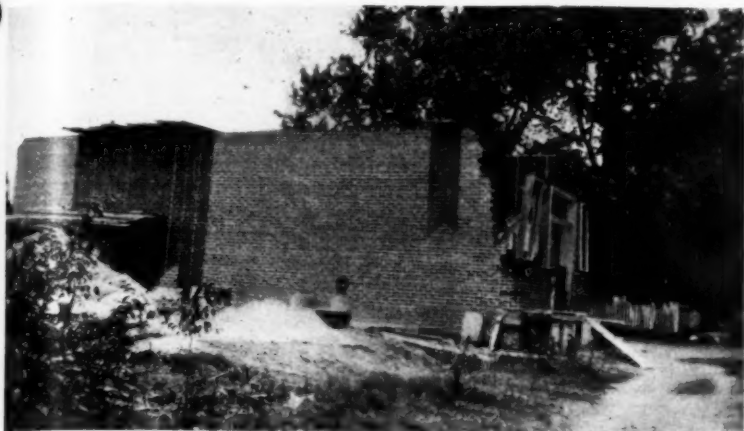
Richmond, 20 miles above Petersburg. It is a great sight in the morning and afternoon when long trains loaded with hundreds of workmen arrive and depart from the plant.

Among the settlements developed and under development are Hopewell, just across the railroad, which is the northern boundary of the du Pont property; Battle

Worthan, is the other company bidding on the franchise. While the Virginia Railway & Power Co., which operates the street railway of Petersburg and also inter-urban lines in this section, denies being interested in a line to City Point, rumor claims that it will be interested in the Richmond company.

With contemplated improvements to the road between

City Point and Petersburg made, and a traction line in operation, the latter city, which is practically the base of supplies, will be greatly benefited. As already stated, \$400,000 is paid out by Petersburg banks to the employees of the du Pont company twice a month. Every day now seems like Saturday in Petersburg, so crowded are the streets, and all lines of business from the retail



FIRST BANK BUILDING ERECTED AT CITY POINT.



LOOKING NORTH ON HOPEWELL AVENUE, HOPEWELL.

Ground Addition at City Point, and a tract of land opened by the Du Pont Development Co. of Petersburg. This company has recently awarded to Perkinson & Finn, Petersburg, the contract for laying about two miles of concrete sidewalks and for the construction of a complete water system. The National Land & Auction Co., J. M. Woolford, manager, main office Washington, D. C., with a branch office at City Point, is also offering lots in a large subdivision opposite Hopewell and north and east of the lands of the du Ponts. Other land developments are under way by the Hopewell Land Co., S. B. Pace, president, Roanoke, and I. C. Shore, secretary and treasurer, Petersburg.

At City Point is being erected a two-story brick and stone bank building by the recently organized Bank of City Point, T. F. Heath, president, Petersburg. Richard A. Munden, Petersburg, is the architect and the Stewart Realty Co. of Roanoke and City Point is furnishing the brick and constructing the building. This company is also erecting at Hopewell a one-story brick bank building for the Farmers and Merchants' Bank of that place, which was recently organized with H. J. Watkins, Jr., cashier.

In order to afford better freight facilities to the merchants and business men of the du Pont city, the Norfolk & Western Railroad will put in a siding at Hopewell and erect a large freight warehouse.

Besides the railroad, transportation is furnished between Petersburg and City Point by hundreds of auto busses which are constantly on the go. The Appomattox River affords a water route to Petersburg, but at present this is not much used. Better transportation will be provided in the near future by a trolley line. Two companies which have secured rights of way for an electric line between Petersburg and City Point are awaiting the date set for the sale of a franchise which will be sold to the highest bidder by the Petersburg authorities about the middle of July. One of these companies is backed by Washington and Philadelphia capitalists, and is known as the Petersburg & James River Corporation, J. W. Long, president, Petersburg. The Petersburg & Appomattox Railway Co., a Richmond concern headed by T. M.



PART OF THE TENT COLONY AT HOPEWELL.



AMONG THE FIRST COTTAGES ERECTED AT CITY POINT LAST FALL.



SAMPLES OF BUNGALOWS RECENTLY ERECTED AT HOPEWELL.

merchants and hardware dealers to the wholesalers, and machine shops, are making the best of their opportunity. The sale of hardware alone, it is said, averages between \$1000 and \$2000 a day, and the furniture houses and concerns handling similar lines are likewise doing a tremendous business.

A prominent business man of Petersburg, however, stated that the activity now experienced there was not wholly due to the du Pont development, as the town was showing marked improvement before that. He said that dwellings and all buildings were in great demand, and that in the last few years the city of Petersburg had spent over \$400,000 in public school building operations. Three large apartment-houses aggregating \$275,000, two of which have been built and the third under construction; one new hotel costing approximately \$75,000, just completed, and construction of another by the Petersburg Development Corporation, M. C. Jackson, president, to be commenced in a few weeks at a probable cost of \$200,000, are among the evidences of Petersburg's advancement. Probably \$60,000 will be spent by the city this summer for sidewalks and sewers.

Not only is Petersburg reaping a harvest from the great amount of money turned loose in this section, but Richmond, Newport News and other cities of Virginia are feeling its effects. Many farmers within 20 or 30 miles of City Point have been directly benefited by receiving good pay for their teams and men which are hired on various hauling operations. Indeed, the whole South is benefited by the fact that thousands of bales of cotton are required by the plant, as cotton constitutes the principal raw material used in the manufacture of gun cotton. This whole section is feeling the influence of the employment of the many thousands of men in the operation of the plant, of still larger thousands working on the other units under construction, and of the millions of dollars paid out for labor and materials. As one steps from a train or an auto-bus he seems suddenly to be landed in a foreign country, so many and heterogeneous are the foreigners who are at work everywhere in and around this plant.

THE WORLD'S LARGEST COAL-HANDLING PIER.



COAL PIER NO. 9, CHESAPEAKE & OHIO RAILWAY CO., NEWPORT NEWS, VA., CAPACITY 66 CARLOADS PER HOUR.

Amazing Increase in Grain Shipments from Newport News.

[Special Correspondence Manufacturers Record.]

Newport News, Va., June 25.

Jumping its exports of grain from 1,700,000 bushels during the fiscal year ended June 30, 1914, to 40,000,000 bushels for this fiscal year is the amazing record that Newport News has made for itself in grain shipments. While developing its exports of grain at this astonishing rate, Newport News has also been largely increasing its exports of coal and general cargo. Estimating the last 10 days of June, officials here furnish the following statement of business over the piers at Newport News, exclusive of coastwise tonnage, for the last three fiscal years:

Coal.		
1913.....	3,309,779 tons	
1914.....	3,089,485 tons	
1915.....	3,450,725 tons	

Grain.		
1913.....	16,789,921 bushels	
1914.....	1,705,891 bushels	
1915.....	40,145,368 bushels	

General Cargo.		
	Export.	Import.
1913.....	73,941 tons	95,630 tons
1914.....	52,501 tons	144,169 tons
1915.....	119,945 tons	125,864 tons

Horses and mules exported November 1, 1914, to June 30, 1915, 120,350 head.

These figures show that while increasing its grain exports at a rate which almost baffles percentage calculations, Newport News has also largely increased its foreign shipments of coal and more than doubled its general cargo business. It has at the same time handled for foreign markets over 120,000 head of horses and mules during the present fiscal year.

The grain shipments have consisted very largely of oats, of which nearly 30,000,000 bushels have been exported, the balance being made up of corn and wheat.

The development of the coal export business to Newport News has been largely aided by the building last year of a coal pier said by the officials of the Chesapeake

& Ohio Railroad Co. to have the largest coal-handling capacity of any pier in the world. This pier can handle 66 carloads of coal per hour. This addition to the coal-handling facilities of the port has been a big factor in this heavy coal shipping development which has carried the trade to the highest point ever reached.

A. SYLVESTER EDMONDS.

PHOSPHATE ROCK PRODUCTION—1914.

United States Government Statistics Showing Output by States.

The marketed production of phosphate rock in the United States in 1914 was 2,734,043 long tons, valued at \$9,608,041. Compared with the production of 1913, which was 3,111,221 long tons, valued at \$11,796,231, there was a decrease amounting in quantity to 377,178 long tons, or 12 per cent., and in value to \$2,188,190, or nearly 19 per cent. As compared with 1912 also there was a decrease in 1914 of 8 per cent. in quantity and of nearly 18 per cent. in value. The report of Mr. W. C. Phalen of the United States Geological Survey, from which these figures are compiled, says that the quantity of phosphate rock mined in 1914 was 2,649,174 long tons. Compared with the quantity mined in 1913, which was 3,152,208 long tons, this was a decrease of 503,034 tons, or nearly 16 per cent. In Florida the decrease amounted to nearly 19 per cent.; in Tennessee it was 3 per cent.; in South Carolina, 1.4 per cent., and in the Western States, 13 per cent.

The production of phosphate rock has been steadily increasing for many years, with an occasional exception, until 1914, when, for causes chiefly outside the country, a diminished output has to be recorded. The average production for the four-year period prior to 1914 was 2,948,205 long tons, valued at \$11,572,425. The output of 1914 compared with this average was 214,162 long tons (7 per cent.) less in quantity and \$1,964,384 (17 per cent.) less in value.

The marketed production of the various kinds of

phosphate rock, by States, in 1913 and 1914, was as follows:

Production of Phosphate Rock in the United States, 1913-14, Based on the Quantity Marketed, by States, in Long Tons.

State.	1913.		1914.	
	Quantity.	Value.	Quantity.	Value.
Florida:				
Hard rock.....	489,794	\$2,987,274	309,689	\$1,912,197
Land pebble.....	2,055,482	6,575,810	2,182,202	5,442,547
River pebble.....	(a)	(a)	(a)	(a)
Total	2,545,276	\$9,563,084	2,138,891	\$7,354,744
South Carolina:				
Land rock.....	109,333	\$440,588	106,919	\$415,039
River rock.....	.....	.....	.....	.....
Total	109,333	\$440,588	106,919	\$415,039
Tennessee:				
Brown rock.....	451,559	\$1,774,392	483,203	\$1,822,770
Blue rock.....	.....	.....	.....	.....
White rock.....	.....	.....	.....	.....
Total	451,559	\$1,774,392	483,203	\$1,822,770
Western States.....	65,063	\$18,167	65,030	\$15,488
Grand total.....	3,111,221	\$11,796,231	2,734,043	\$9,608,041

aSmall quantity of river pebble included with land pebble. bIncludes Idaho and Wyoming.

During 1914 there were exported 964,114 long tons of phosphate rock, valued at \$6,771,652. As compared with 1913, this was a decrease of 402,391 tons in quantity and of \$3,224,028 in value.

The great bulk of the phosphate exported from the United States is from the Florida field. As is well known, the reduction of the cotton acreage of the South and also a cutting down in the proportion of fertilizers ordinarily used on the farms are further factors in the decreased demand for phosphate rock.

Tables of imports show that while there has been a falling off in quantity and value of the various fertilizer materials annually shipped into the United States, there were still importations of such materials amounting to \$9,921,439 in 1914. Among these items is calcium cyanamid, or lime nitrogen, made in part by the extraction of nitrogen from the atmosphere.

In 1914, 21,702 tons were imported from the factory of the American Cyanamid Co. at Niagara Falls, Ontario, Canada, valued at \$1,119,785.

Houston Now Ready for the Ships of the World

SHIP CHANNEL FROM THE SEA AND MUNICIPALLY-OWNED WHARVES ARE COMPLETED—THE SOUTH GAINS A GREAT NEW INLAND PORT.

[Special Correspondence Manufacturers Record.]

Houston, Tex., June 28.

With the completion on July 1, 1915, of the first unit of municipally-owned wharves, Houston harbor will throw open its doors to the water-borne commerce of the world. This landlocked inland harbor is located 50 miles from the Gulf of Mexico, and is connected with the Gulf by the Houston Ship Channel, a navigable stream from 150 to 300 feet wide, with a mean depth of 25 feet of water at all times. Ultimately the channel will be dredged to a depth of 35 feet, and will be widened to 250 feet from the basin to the Gulf.

The United States Government completed the dredging of the channel about four months ago at an expenditure of \$2,500,000. The work was started June 15, 1912, and was prosecuted vigorously to the finish. The total amount expended upon the Houston Ship Channel by the Government since the project was declared feasible by Government engineers is approximately \$4,000,000.

At the head of navigation on this channel the Government constructed a turning basin, the area of which is 25 acres, with a diameter of 600 feet at the bottom. Later it is planned to increase the basin to 1100 feet of clear usable width. The minimum depth in the turning basin is 25 feet.

The city of Houston owns 237 acres fronting this turning basin, on which the first terminal facilities have been constructed, and on which it is proposed to add other wharves, slips and docks as the traffic justifies.

The first unit of these improvements consists of a longitudinal type wharf 625 feet long and 50 feet wide. It is constructed of creosoted pine timbers. Adjoining the wharf is a reinforced concrete one-story warehouse 416 feet long and 100 feet wide, and floored with brick. Connecting with this wharf and warehouse are railroad tracks furnishing transportation facilities to a belt railroad that connects with the 17 railroads which find terminals in Houston. The depth of water at the first unit wharf is 27 feet. These first improvements cost the city of Houston approximately \$300,000, and have been put in with the view to becoming a part of a general system of municipal-owned terminals surrounding the turning basin.

Already the channel is being utilized by regular lines of steamers and coastwise vessels. The safety with which vessels drawing 21 and 23 feet, loaded, have navigated the channel is claiming for it the merited attention of American port authorities.

The city of Houston has \$3,000,000 available for harbor improvements, which sum was recently voted by the citizenship. The plans for the port development are being carried out by expert engineers and the Harbor Commission. As drawn up, they contain ample provisions for the following:

Railroad facilities, with four or five miles of switching tracks available for the storage of cars adjacent to the wharves, thus providing proper facilities for rapid unloading; railroad facilities from wharves to industries in the city which utilize the wharves, these facilities to be owned, operated and controlled by the city.

Zones for freight service, by which a uniform charge may be made for the hauling of a car from any city wharf to any industry within the city within a certain zone, regardless of the number of railroads handling the car, thus permitting every industry to receive more equitable service and insuring better results by the carriers.

Adequate warehouse facilities will be constructed to encourage the storing of manufactured goods and raw material, which will be shipped in small lots to interior points, thus utilizing Houston's railroad facilities for a distributing point.

The elevation of the floors of the wharves at Houston above the water surface will be about 12 feet. The average water level in the turning basin is about sea level, and the rise and fall of tide is negligible.

With the additional units it is planned to construct the wharves at right angles or nearly right angles to the axis of the channel, thus reducing the cost of bulkheads and increasing the water-front accommodations.

The width of the aprons on the new wharves will be about 20 feet (that is, between the wharf shed and the edge of the wharf). The width of the wharf sheds will probably be 250 feet, thus making the pier 290 feet in width, and giving a haul of 130 feet from ships to the freight cars in the center of the structure.

Two depressed tracks will be laid along the center of the wharf shed and one track on each apron, the track being level with the floor. The pier sheds will generally be two stories in height, to enable the handling of outgoing cargoes on one story and inbound cargoes on the other story.

Fire protection will be provided by constructing all wharf sheds and warehouses with either reinforced concrete or structural steel and installing sprinkler systems. Steel will probably be used for all wharf sheds to decrease the dead load.

The docks or slips will be about 250 feet wide to permit ships of 50 or 60-foot beam to tie up at wharves at each side of the dock and allow for clearance between for lighters and other craft. The docks will probably be 750 feet long. The wharves will be connected on the land end by marginal streets about 150 feet wide for the accommodation of traffic of all kinds.

Mechanical equipment will include dock winches and cargo hoists, movable conveyors and belt conveyors, to be laced according to the cargoes to be handled. The first unit is already equipped with cargo hoists and movable conveyors similar to those used in New York and other Eastern ports.

The people who have made the ship channel project possible, together with the Government, have constructed two large hydraulic pipe line dredges to be used exclusively in the maintenance of the ship channel. These two dredges cost approximately \$350,000, and will be used particularly in the bay section of the channel to prevent shoaling and on the upper reaches of the channel until the new cuts assume a natural slope. The United States Government, through the Rivers and Harbors Congress, appropriates \$200,000 annually for the maintenance and operation of these dredges and the upkeep of the channel.

City Engineer E. E. Sands is the engineer for the Board of Port Commissioners, while Mr. J. F. Coleman of New Orleans, a recognized authority on port matters, is consulting engineer.

PAUL H. SHELTON,
Secretary, Civil Service Commission, City of Houston.

Atlanta Organizes Great Fair.

Through the efforts of the Atlanta Chamber of Commerce, the Southeastern Fair Association has been successfully organized and financed.

Lakewood Park, as a site for the fair grounds and buildings, has been leased from the city, and contracts have been awarded for constructing the main buildings and laying out the grounds.

This association was started by the business men of Atlanta to provide a large permanent annual exhibition modeled after the Toronto and the Dallas fairs, it being felt that Atlanta possessed all of the advantages as a central point to hold a great annual exhibition of this kind.

The association has sold an issue of \$75,000 worth of stock for a working capital, this having been over-subscribed. Both the county and city have appropriated \$75,000 each, making a total of \$150,000 available for the construction of permanent buildings and grounds. The city has also leased to the fair association Lakewood Park, a beautiful city park adjoining the city limits and having more than 300 acres, with 100 acres of lake.

The plans provide for a number of buildings for various purposes, and contracts have been awarded for constructing the two main buildings, one to be devoted to agricultural purposes and the other to trade exhibits. These structures, which are the largest ones to be

erected, will each be 100x300 feet. They will be of reinforced concrete construction, with hollow tile walls. Special attention has been paid to the architectural and landscape features of the buildings and grounds, and these have been attractively worked out.

In the center of the court around which buildings will be constructed will be a sunken garden, with two lagoons. The water from these lagoons will form a cascade leading from the court to the lake. An expansive plaza will be laid out overlooking the lake, and this is designed to be one of the artistic features of the grounds.

The plans for this work are under the direction of W. T. Downing, supervising architect. R. M. Walker is supervising contractor of the building work. Contract has been awarded to the Nichols Construction Co. of Atlanta for the concrete work; to the Phoenix Iron Co. of Philadelphia, Pa., for the steel truss work, and to S. E. Lilly of Atlanta for the brick work.

The officers of the Southeastern Fair Association are: President, Mell R. Wilkinson; chairman executive council, I. E. Allen; vice-chairman executive council, Walter G. Cooper; treasurer, Henry W. Davis; general manager, R. M. Striplin.

Nearly \$1,500,000 Available for North Carolina's New Harbor.

[Special Correspondence Manufacturers Record.]

Morehead City, N. C., June 26.

Instead of \$700,000, there is \$1,400,000 now available for work on the great breakwater, nearly two miles long, that will form the harbor of safety at Cape Lookout. This is the information given out by Senator F. M. Simmons, who came here to take a hand in the inauguration of the work. The first stone has been dumped into the sea 1500 feet from the shore at the Cape. It is for the mattress on which the base of the breakwater will rest. Enough of the mattress will be in place within a week to permit the dropping of the big stones for the superstructure, according to Mr. Robert Lacy of D. T. Taylor & Co., Baltimore, who have the contract for the work. Mr. Lacy further states that 30,000 tons of stone will go into the breakwater monthly.

Senator Simmons worked strenuously to get the appropriation for this work and also for the harbor improvements at Beaufort and Morehead City and for the section of the inland waterway in this vicinity, which includes the Beaufort Canal at this end and the Albemarle and Chesapeake Canal at the other end, near Norfolk.

While here Senator Simmons took a look at the canal section at this end of the inland waterway. The canal has a present depth of 10 feet and a width of 90 feet. The Senator predicts that before long the depth will be increased to 12 feet and the width to 120. He told the writer that he saw a great future for the waterway, and that it may be deepened everywhere to 20 feet, and possibly more. He believes that before long it will be extended southward via Newbern to Wilmington, perhaps using 20 miles of the deep Trent River, which empties into the Neuse at Newbern, his idea being that the waterway should at no place be near the ocean. He feels sure that it is only a question of a few years when it will be in operation to Florida and be of great importance whether in time of war or of peace. The fact that in time to come the canal would be deepened made it imperative to use the Albemarle and Chesapeake Canal and not the older Dismal Swamp Canal.

The Senator expressed his gratification at the amount of the traffic through the waterway. Large quantities of lumber are going northward through it from mills in this State as well as from Florida, Georgia and South Carolina mills.

Big Wheat Cargo from Galveston.

Activity in export shipments continues at Galveston, and several large cargoes have recently been loaded for foreign countries. Last week two steamers with freight valued at \$711,340 cleared for transatlantic ports. Next to the largest shipment of wheat ever cleared from Galveston was loaded last week on the Dutch steamer Noorderdyk for Bordeaux via Newport News, which carried 344,000 bushels of No. 2 hard winter wheat, valued at \$416,240.

Climbing Up the Greatest of North Carolina's Mountains

PASSENGER TRAINS NOW RUNNING TO MOUNT MITCHELL, THE HIGHEST PEAK EAST OF THE MISSISSIPPI RIVER.

[Special Correspondence Manufacturers Record.]

Asheville, N. C., June 28.

With the inauguration of railway passenger service this week—two trains per week, on Tuesdays and Thursdays—between Black Mountain and the foot of the one-mile trail that leads to the pinnacle of Mt. Mitchell, the highest mountain east of the Rockies, the first step has been taken by Messrs. Perley & Crockett, wholesale lumber manufacturers of Black Mountain, who own and operate the railroad, to make this king of mountain peaks of eastern America "The Pike's Peak of the South," as is their avowed intention.

The Mt. Mitchell Railroad, as the passenger department of the line calls it, was built primarily for a logging road, construction having begun from Black Mountain on December 12, 1911, while the first logs were hauled December 13, 1912, this being the formal opening of the road. At that time the timber-cutting rights on 9000 acres of land surrounding the peak of Mt. Mitchell were owned by Messrs. Dickey & Campbell, who about two years ago turned over their holdings to the present owners, who continued the development outlined by the pioneer promoters. Later, the idea developed that in connection with the logging road passenger service could be furnished to those who wished to enjoy what is termed by many experienced travelers one of the grandest and most inspiring views in all America. So this year a train, consisting of one converted-into-a-coach flat car and one 42-ton center-geared engine, built by the Climax Manufacturing Co. of Corry, Pa., is maintaining a twice-a-week schedule over the three-foot-gauge railroad, which begins at Black Mountain, on the Southern Railway, 14 miles east of Asheville, and extends to the commissary and the upper terminus at the foot of the trail.

The road is unique in construction, and, along with other distinctions, is the highest steam road in the eastern part of the country. After leaving the valley it swings around the eastern side of the Black Mountains,

rising upwards in a series of nine separate "switchbacks" until it reaches a height of 5700 feet above the sea level. The "switchbacks" are used to overcome the steep grades and to shorten the length of the road, instead of circling the mountains, as is the usual method of mountain railway construction, and they make it possible for the road to be built up one side of the slope, resembling a gigantic folding rule partially extended.



OVERHEAD LUMBER-SKIDDER AT WORK.

From the base to the terminus the route is 22 miles long.

It is believed that, beginning in the middle of July and extending throughout the rest of the summer season, traffic will be heavy enough to justify the owners in operating a daily train. The tourist can leave Asheville in the morning after breakfast for Black Mountain, then up to the foot of the trail on the Mt. Mitchell Railroad, then by muleback or afoot up the trail to the summit of Mt. Mitchell, spending five hours in and around the rustic lodge or "hotel," where meals are

served within throwing distance of the memorial monument to Prof. Elisha Mitchell and within sight of Clingman's Dome and others of the higher peaks in Western North Carolina, and then by the same routes return to Asheville in time for supper.

With an idea of preserving for the pleasure of the present and future generations a tract of land surrounding and including the peak of Mt. Mitchell, which is 6711 feet above the sea level, the North Carolina Legislature at its last session appropriated \$20,000 and appointed a commission to buy as much land as possible for that amount. When this tract is secured by the commission, which is at work on the proposition now, improvements will be made; precautions will be taken against forest fires, and it will be opened up as a public park for the use of the people generally. The shaft, which was erected to commemorate the discovery of Mt. Mitchell by Prof. Elisha Mitchell, who lost his life immediately following the discovery, has recently been blown down, due to the undermining it received at the hands of visitors in the last few years, who from time to time chipped off small pieces for souvenirs. It is expected that it will be reconstructed, or another more substantial one erected in its place when the State takes charge, while laws will be made and precautions taken to protect it and other improvements from all harm.

At present the summit of Mt. Mitchell and the land immediately surrounding it show very little of the signs of civilization. The rustic lodge, referred to above, was built from hewn logs and placed together in backwoods style. It is occupied by an Asheville man, who serves meals to the visitors and can keep them over night if they wish. Recently telephone connection with Asheville was effected from the lodge, and in the formal opening of the line Mayor J. E. Rankin and N. Buckner, secretary of the Asheville Board of Trade, were, respectively, first and second to talk to the highest point east of the Rockies by telephone. There is also a wireless station in course of construction, which will be used for communication between the summit and the station atop the Langren Hotel in Asheville.

In connection with the construction of the Mt. Mitchell Railroad the work of Messrs. Perley & Crockett and their plans for the future development of this section are of interest. They have located at Black Mountain a double band mill for the manufacture of dressed lumber that has a capacity on one side of 70,000 feet of lumber per day or a total capacity with both sides running of 110,000 feet per day. To keep the mill running at full force every day, as it is now, it takes an average of 50 cars of logs per day. All of this timber is being cut from the 9000-acre area controlled by Messrs. Perley & Crockett, which is estimated to contain from 250,000,000 to 300,000,000 feet of lumber. With modern equipment and facilities such as have been installed by the lumbermen it is estimated that all the usable timber will have been cut within a period of six years.

Near the commissary, just west of Mt. Mitchell peak, a mill has been established to prepare the logs for shipment on the log trains before they reach the large mill at the foot of the mountain. This is the highest railway point in the East. This mill is run by a 150-horsepower engine, which burns the sawdust from the mill for fuel. All spruce and balsam trees are cut: the small trees, from four inches to eight inches, are cut up for pulpwood, as are the slabs and blocks from the



PASSENGER TRAIN TO MT. MITCHELL.



ROUGH COUNTRY NEAR SUMMIT.

big mill, and all are shipped to the Champion Fiber Co. at Canton, N. C. All logs above eight inches up are taken to the mill for cutting into lumber. The double band mill was built by Clark Bros. of Olean, N. Y. The total mileage of the Mt. Mitchell Railroad, including all sidings, is 30 miles. In the next three years 15 more miles will be constructed. After the main line reaches its terminus it branches off to the west for five miles, while approximately eight miles more will be added to this route when needed. The other line branches off to the east for two miles, with the prospects of seven miles more being built in the future.

Aside from the passenger equipment of the Mt. Mitchell Railroad, it has in use now five 42-ton center-gear-



CURVE ABOVE MONTREAT.



TRACK GOING UP THE MOUNTAIN.

"Climax" engines, two "Shay" side horizontal geared engines manufactured by the Lima Locomotive Corporation of Lima, O.; 60 logging trucks made by the Kilby Locomotive & Machine Works at Anniston, Ala., and 20 trucks manufactured by the Enterprise Foundry & Machine Co. of Bristol, Tenn.

The logging equipment consists of three log loaders from the American Hoist & Derrick Co. of St. Paul,

Minn.; four ground skidders made by the same company, and two overhead cableway skidders that have a reach of 2000 feet from a given point, which were constructed by the Clyde Iron Works of Duluth, Minn. This equipment has had much to do with the rapid and

efficient loading of the log trains, and it is stated that for mountain work it is especially capable.

The future prosperity of the passenger department of this scenic railroad is indicated in the announcement that both the press associations of North Carolina and South Carolina, the former meeting at Montreat, a few miles east of Black Mountain, June 28 to July 1, the latter at Spartanburg on the same dates, will meet at Black Mountain on the morning of July 2 and form one

big party, a sort of pre-Fourth of July party, as it were, and take in the marvelous sights along the road and on the summit of this great mountain, the exploration of which cost Prof. Elisha Mitchell his life. After his death, June 27, 1857, the mountain was named in his honor, no name having been applied to it previously.

The North Carolina Forestry Association will take the same trip to Mt. Mitchell on July 9.

NITRO-GLYCERINE TO SHOOT OIL WELLS

How It Is Handled and the Results Secured.

[Special Correspondence Manufacturers Record.]

Pemeta, Okla., June 28.

The use of nitro-glycerine in shooting oil wells is always one of the most interesting, as it is the most dangerous, feature of the entire oil-producing game. The shot is placed in the producing sand, at the bottom of the well, and when exploded it breaks up the sand, with the idea of increasing greatly the production of the well. This is followed successfully in this field as it was also in Ohio and Indiana, but not with success in the California field or in the Healdton field of Southern Oklahoma, because the sands are too soft.

"Never before has there been so much nitro-glycerine and dynamite used within such a short space of time as during the past few months," was the statement today of Barney Horrigan, field representative in Oklahoma for the American Glycerine Co., and the man who oversees the shooting of wells in this field. He has played the game in numerous oil fields, however, and is an authority on this feature of the oil game.

"I mean by this," continued Horrigan, "that the construction of the Panama Canal and the European war have used up such a vast amount of the explosive. There has been some talk of a scarcity, and that it might interfere with the oil game, in that wells could not be shot. This, in my opinion, will not result, as I

am sure there is enough on hand to shoot wells for two years, even if there was no more manufactured.

"It is true that the price of the raw materials used in making the explosive have advanced rapidly because of the vast amount used on the canal zone and across the water. Sweet glycerine, for instance, has gone up from 10 1/4 cents a quart to 23 cents a quart, and nitric acid and sulphuric acid from \$3 and \$2.80 to \$3.40. It takes 1500 pounds of the acids and 80 of the oil to make 160 quarts of the nitro-glycerine.

"We receive the acids and the sweet glycerine separately, and then mix them in the field, getting the explosive ready for use. The sulphuric acid is used to prevent an explosion when the sweet glycerine and the nitric acid are put together. Of this mixture the sulphuric acid is 70 per cent.

"All the sulphuric acid used in the mixing is waste in the long run, and therefore the waste is the big percent. of it. Ten quarts of nitro-glycerine weigh 37 pounds, the contents of a can. To manufacture that amount the total waste is 592 pounds.

"In manufacturing the explosive, after the sweet glycerine and the nitric acid go together and while still with the sulphuric acid, the entire mixture is then given a water treatment. This has the effect of separating the sulphuric acid from the other two; the sulphuric acid goes off into one drum, the nitro-glycerine into another, and it is ready for use.

"In doing our mixing in the field the sulphuric acid

is all waste. In the Dupont plant, back east, they have a big restoring plant in connection, where this waste is caught and used again, but in the field it is impossible for us to have anything of this kind.

"In shooting oil wells in this field the shots used are, as a rule, not big. They average, perhaps, 30 quarts, and they run all the way from 10 quarts of the nitro-glycerine to 80 quarts. In only one instance have we used more than the 80; that was a week ago, when we shot the Gypsy well, which is located about midway of the field between Pemeta and Oilton, and we used 140 quarts in making that shot."

The details connected with shooting a well must be attended to carefully, and as a result Mr. Horrigan is called frequently to other fields to superintend the work. He was on his way today to shoot the well just drilled at Ralston to a depth of 3200 feet, a strictly wildcat well in northwestern Pawnee county. The shot had been placed in the well, but for some reason it had not been exploded and Mr. Horrigan was called to do the work.

Mr. Horrigan says that shooting wells in the southern portion of this field has been in progress for the past 50 days, but that it has just commenced in this district. The increased yields from shooting are sometimes wonderful. When the McMan well on the Emma Coker allotment was shot recently it went from a very mediocre producer to one making 5000 barrels a day, and a well shot on the Sina Crow allotment for the Quaker company recently went from 1700 barrels a day to 3000 a day.

When the Healdton oil field came into prominence, about 18 months ago, Mr. Horrigan inspected that field with reference to the feasibility of shooting wells, and reported to his company that it could not be done. The producing sands in that field are too soft, the same as in the California field. When this condition exists, a shot only stirs up the fine sand with the oil, and it all comes to the surface together, a mixture similar to the flood waters of the Cimarron, Canadian, Red and other quicksandy rivers of the Southwest. Because of this softness of the sands, a big amount of sand always collects in the storage tanks in the fields where this condition exists.

The method followed by yegs and cracksmen in making the "soup" with which they open bank vaults is not the same as that by which the nitro-glycerine is made in the oil field. The yegs use dynamite and cook or boil it until they get the "soup" they need. According to Horrigan, the yegs steal the nitro-glycerine from the storehouses in the oil fields and elsewhere whenever they get an opportunity.

In regard to this oil field Mr. Horrigan said:

"This has been the wonder field of the world, and will continue to be for a long time yet." C. M. SARCHET.

Big Shipment of Potatoes.

An indication of the extent of the trucking industry in the Norfolk section is seen in the statement that about 100,000 barrels of potatoes were shipped from that city on one day last week. This is probably the largest shipment from Norfolk in any one day, and its destinations included the following: 48,000 barrels to New York; 10,000 barrels to Philadelphia; 8,500 barrels to Boston; 2,000 barrels to Baltimore; 900 barrels to Washington.

A Suggestion to Chemists.

De Land, Fla., June 21.

A chemist told me the ashes of saw palmetto root contained 10 per cent. of potash. There is plenty of it in Florida. Tannin has been extracted from it at a profit.

There is plenty of carbonate of lime in Florida. Applied to the land, it sets potash free for plant food.

E. E. ROPES.

W. P. Leister, Forest City, N. C., will establish a knitting mill and has let contract for the construction of the building.

Crystal Springs Bleachery Co., Chickamauga, Ga., will build a two-story addition to its bleachery and an addition to its warehouses.

Treating Gum Wood for Cabinet Work

By SECRETARY J. M. PRITCHARD of the Gum Lumber Manufacturers' Association.

Notwithstanding the fact that gum has been in the past a somewhat difficult wood to manage in order to prevent shrinking and warping and twisting, it is bound to become one of the most popular woods for furniture-making on the continent. Experience has been teaching us how to overcome some of its undesirable features, and when we get to really understand the nature of the wood, the more we know of it the better we like it. If we could get for this wood some new and distinctive name by which it would always be known, it would be a long step in the direction of raising it to the high pedestal to which it is entitled among the beautiful woods of the world. The word "gum" has so long been associated with imitation walnut, mahogany and Circassian that many persons have come to look on it with disdain.

But the finger-figured gum today has strong claims to distinction among the beautiful and expensive woods of the world. The writer has seen furniture made of this wood that could not be surpassed by the finest Circassian. The markings were, perhaps, somewhat less striking and more quiet, but they were, nevertheless, clear and distinct. The consuming public today are not after the loud effects that were in such demand only a few years ago. While still demanding markings that are clear and distinct and artistic in appearance and finish, they are manifesting a decided preference for the more quiet effects. This is noticed in the decline in the demand for the loud splashy flake in quarter-cut oak.

As before intimated, one of the chief reasons for the failure of this wood to receive heretofore its fair share of public appreciation has been the use to which it has been put in the way of imitating more expensive but less beautiful woods. The only advantage which these more popular woods had over gum was the remoteness of their place of origin from the place of consumption, and many who had more money than taste bought the goods, not because they were more beautiful, but because they were more expensive and made of "foreign" wood. This class of people will always enable Circassian to find a place in the high-class furniture markets of this continent. But could we make a complete change in the condition of things, could we transplant our gum trees beyond the Circassian Mountains and make it difficult to obtain, and transplant the Circassian to the American continent, there would be a complete change in sentiment also, and the popularity of the two woods would be reversed. But gradually this wood is coming into its own. Largely through the efforts of one or two veneer and panel manufacturers who make a specialty of figured gum, the beauties of this native wood are being brought to the attention of the consuming public.

Figured gum veneer is preferable to Circassian because it is much easier to handle, and being more tough and less brittle, is less liable to check after it is finished, or to be affected in any way by the expansion and contraction of corestock which result from atmospheric changes.

One of the most serious objections to gum—that is, the solid wood—is its persistent tendency to shrink; but this objection may be overcome if the wood is allowed to properly season in the open air before being kiln-dried. We are living in a fast age. We want the living tree converted into a piece of furniture while we wait. But a halt is called in the quick transforming process when we reach this wood. We may not like it; we may find it hard to go back to the time of our forefathers, when all woods were allowed several years to season before being made up into the finished articles; but this wood is inexorable, and we might as well recognize the fact at once and give in gracefully. Then after it is thoroughly seasoned, give it plenty of time in the drykiln. Double the time that is given to most other lumber will not be too long. Then don't be in a hurry working it up after it leaves the kiln. Give it a chance to accustom itself to the changed atmosphere before making it up.

The tendency of this wood to warp may be overcome by a little extra care and a few extra strips in the piling, both before and after it has been in the kiln.

Use strips enough to keep it straight before it goes into the kiln, then use enough to keep it straight while in the kiln, and again after it comes out, and very little, if any, trouble will be experienced from this source.

The finish is an important item in determining the popularity of this wood. I recently received a letter from one of the leading veneer and panel manufacturers of the country who is making a specialty of figured gum, and he complained about the way some finishers were trying to dope and stain the wood, and destroying its distinctive features. Gum wood should not be stained, but should be finished as near natural as possible. A coat of bleached shellac for a surfacer and then bodied up with a very pale varnish is the proper way to obtain a clear, beautiful finish. This wood does not require to be heavily bodied to give a good finish. Some pale, thin, quick-drying varnish is better than a heavy-bodied varnish, because they stand oil rubbing better. A heavy varnish is liable to "pull out" unless it is thoroughly dry, and that requires considerable time. Of course, the pulling out may be prevented by water rubbing the large surfaces and allowing the work to stand afterward for 23 hours before finishing with oil; but more satisfactory results will be obtained from the use of light-bodied, quick-drying varnishes.

Of Interest to General Contractors.

The following resolution, adopted by the Bridge Builders' and Structural Society of New York City, will be of interest to general contractors:

Whereas, the General Contractor asks steel fabricators to make bids upon the steel work entering into a given building, in order that the lowest bid so secured may be used by him as a factor in making up his bid on the entire work; and

Whereas, after securing the award of the entire contract it is frequently the practice of said General Contractor, instead of in good faith giving the steel work to the company whose bid he has used, to ignore the company making the bid and use such bid as a basis for further negotiations with other steel fabricators, with the object, and frequently the result, of securing still lower prices for the steel construction; and

Whereas, such practice is a direct violation of not only a moral, but usually an express obligation, or a promise to give the steel work to the first lowest bidder whose bid he has used in making up the general estimate; and

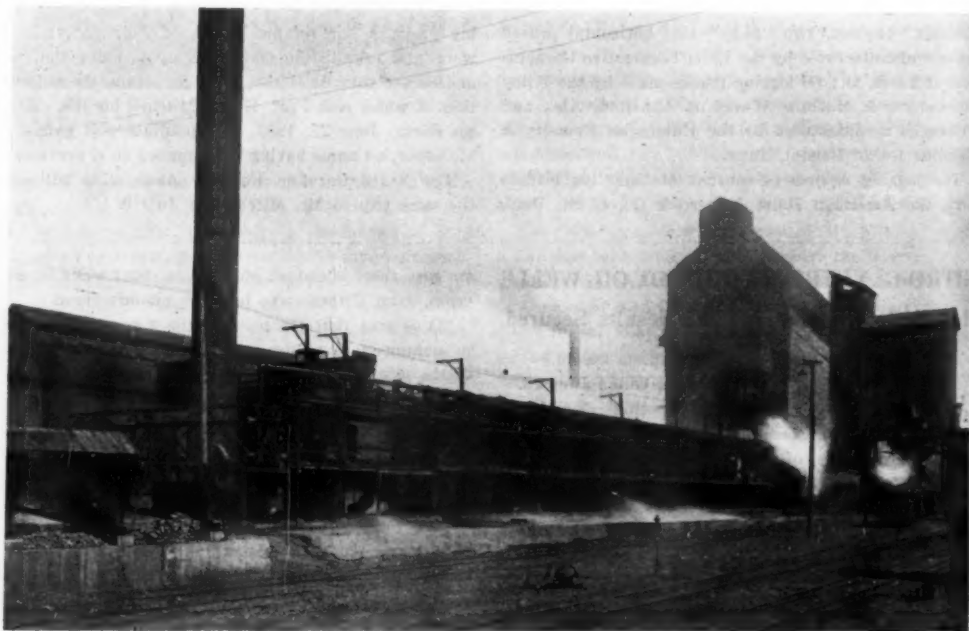
Whereas, it is after the owner has awarded his contract that the unfair General Contractor declines to let the steel work upon the price he has used in bidding to the owner, but begins to shop around to get still lower prices to increase his own profit, with the result that the steel work may be skimmed and scalped to the detriment of the owner; and

Whereas, the preparation of estimates and bids by steel fabricators involves considerable expense, which will be lost to them if their proposals are not treated in good faith, and are simply to be used as targets by unfair contractors and subsequent bidders after general contracts are let; therefore,

Be it resolved, That bids be made to only such General Contractor as will agree to name, before or at the time of submitting his general bid, the party whose figures were the basis of the price used for structural steel work; and

Be it further resolved, That on and after July 1, 1915, the members of the Bridge Builders' and Structural Society will endeavor to induce, as a matter of simple fairness and justice, all owners and architects to receive prior to or simultaneously with the bids of General Contractors a separate and distinct bid on structural steel requirements where the aggregate is in excess of two hundred and fifty (250) tons, such bids to be publicly opened, with the understanding that the most favorable bid will be accepted, or recommended for acceptance, if the general contract is let.

WOODWARD IRON CO.'S EXTENSIVE BY-PRODUCT COKE OVEN PLANT.



The present by-product coke plant of the Woodward Iron Co., Woodward, Ala., consists of 170 Koppers cross-regenerative coke ovens, with a plant for the recovery of tar, and Koppers direct process for the manufacture of ammonium sulphate. The first battery of 60 ovens was installed in 1910, the second of 80 ovens in 1912, and the third, 30 ovens, in 1914, by the H. Koppers Company, designers and builders of by-product coke and gas-oven plants for ammonia, benzol and tar recovery, First National Bank Building, Pittsburgh, Pa. Coal from nearby mines is used, and the coke pro-

duced is used in the blast furnaces of the Woodward Iron Co. Tar produced at this plant is delivered to a nearby plant of the American Tar Products Co. and distilled for the production of creosote oil and various grades of pitch. The surplus gas produced in this plant is utilized under boilers and in other ways for heating purposes. The ammonium sulphate is sold mainly for fertilizer. The present plant has a carbonizing capacity of approximately 3000 tons of coal per day, and will produce 2200 tons of coke, 21,000 gallons of tar, 30 tons of ammonium sulphate and 17,000,000 cubic feet of surplus gas per day.

CABLE RAILWAY IN STORAGE OPERATIONS.



An effective method of transferring to storage by cable railway at the plant of the Southern States Phosphate & Fertilizer Co., Savannah, Ga., is shown in this illustration. The equipment consists of a Hunt tub rig unloading tower and cable railway. The cable railway is approximately 6200 feet in length, more than a mile. This equipment was furnished by C. W. Hunt Company, Inc., West New Brighton, N. Y.

Americans Advised to Invest at Home.

Mr. James Gould of Pine Bluff, Ark., a dealer in Arkansas securities, in a letter to the **MANUFACTURERS RECORD** says:

"I am just returning to my home city, Pine Bluff, Ark., from a business trip East in my line of business, 'municipal bonds of my State, Arkansas,' and in today's Chicago financial press read with much interest that Wall Street people are going to offer the small investor a chance to subscribe for the English loan to be placed in the United States, said loan to bear 4½ per cent. interest.

"As the staunch friend of the South, it seems to me

it is an opportune time for your journal to speak out in meeting against this. We have in every State of the South, and I guess also in the North, municipalities, drainage, levee, road and other improvement districts issuing bonds for local improvement bearing from 5 to 6 per cent. that can be bought for par. Bonds whose legality and safety are above question, the proceeds of which are to be used at home to build up local communities, and why should any man in this United States send his money across the waters for securities that even staid old England may find herself in hard straights to repay. Let Morgan and men of his wealth put their own money into war-swept European bonds, but let the great mass of Americans invest their savings at home

is my advice, and should be the advice of the press of this nation. Sell Europe what we have for sale at cash, but not for their war-battered bonds."

Cottonseed Industry in Foreign Countries.

In 25 years the value of American cottonseed products has risen from \$20,000,000 to \$136,000,000, and many people in the cotton districts can remember when the cottonseed accumulated in huge piles about the ginneries, just as sawdust does near the sawmills. And it was just as worthless as the sawdust. Today the cotton fields of the United States have to a large extent replaced in our economic system the olive groves of the Mediterranean district. The oil is a first-class edible product, and the cake left after crushing the seed constitutes an equally valuable cattle feed.

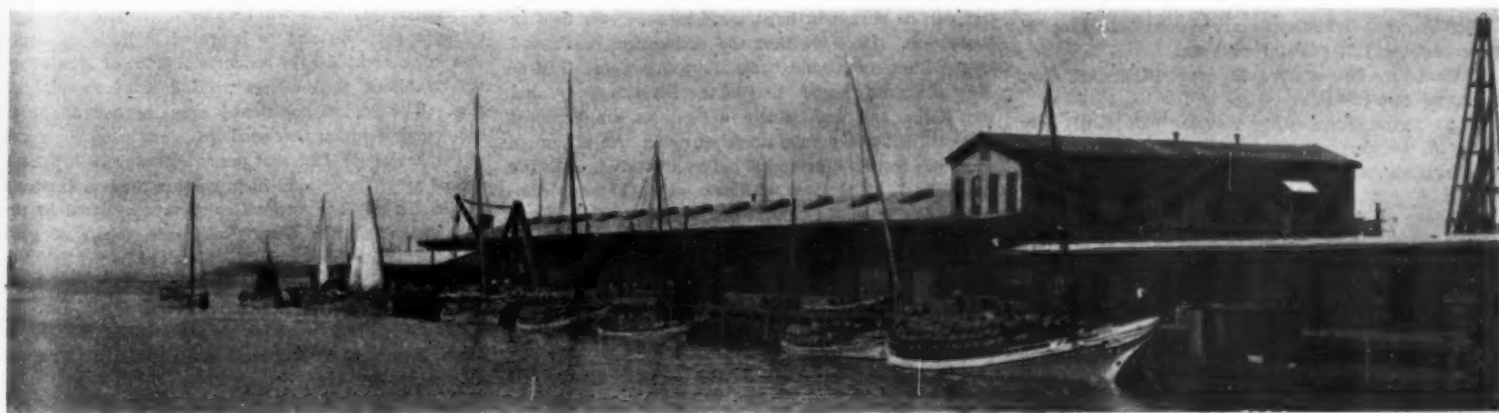
These cottonseed products have entered largely into our export trade, and the fact that there was a falling off in exports from \$42,000,000 in 1913 to \$25,000,000 in 1914 has led to an investigation of the entire foreign field by the Bureau of Foreign and Domestic Commerce of the Department of Commerce. The results of the investigation are embodied in a monograph entitled "Cottonseed Industry in Foreign Lands," which is a compilation of information from consular reports and other sources by Dr. Thomas H. Norton, commercial agent of the bureau.

Outside of cotton-growing lands, Great Britain and Germany are the only countries in which cottonseed is regularly crushed on a very large scale. Egyptian cottonseed is employed in Germany; Egyptian and Indian chiefly in Great Britain. More success has been obtained in Germany in producing an edible oil, fairly rivaling the best grades of American oil, than has been the case with British crushers. The German manufacture is under the control of a leading American firm in this industry.

The monograph deals exhaustively with the question of cottonseed crushing in the countries where cotton is grown, especially India, Egypt, Asiatic Russia, Turkey, Brazil and Peru in our hemisphere. In none of these countries is the industry so far developed as to threaten the markets for American oil and meal, with one exception, Asiatic Russia. Turkestan is peculiarly favored by soil and climate for cotton culture. A large group of the oil mills in that country are equipped with American machinery, and there is a marked ambition to produce grades equal to the choicer qualities of American oil.

There is an interesting chapter devoted to the effects of the war on the exports of cottonseed products, in which it is shown that after the first months of hostilities there has been a rapid increase in the value of both cake and oil sold abroad.

SHIPPING PRODUCE FROM THE NORFOLK TRUCKING SECTION.



TRANSFERRING PRODUCE FROM GASOLINE BOATS DIRECTLY INTO CARS, NORFOLK, VA.

In order to handle the large volume of produce shipped from the trucking section of Norfolk, every transportation facility has been provided. Railroad lines extend into every part of the trucking district, and no farm is more than two miles from these railway sidings and no more than three miles from water transportation.

Several thousand combination gasoline and sail boats ply throughout these

waters and bring the truck to terminal shipping points in Norfolk. The accompanying illustration shows a number of these little boats with their loads of produce ready to transfer them directly into iced cars for shipment to the country's markets. It is said that on every shipping day in the year from 15 to 50, and often as many as 200, carloads of farm products go out from this section.

Good Roads and Streets

SOUTHERN HIGHWAY ACTIVITIES.

Details of Week's Progress in Improvements in City and Country.

Further details of road and street undertakings and bond issues mentioned below are given under the headings Construction Department and New Securities, published elsewhere in this issue.

The MANUFACTURERS RECORD invites from its readers information about road and street work projected or under way, photographs of good roads and discussions of matters pertaining to the betterment of the highways of the South.

Bonds Voted.

Rockwall, Tex.—Rockwall county voted \$25,000 bonds to construct roads.

Bonds to Be Voted.

Cartersville, Ga.—City votes July 17 on \$15,000 bonds to improve streets.

El Paso, Tex.—El Paso county votes July 27 on \$750,000 bonds to construct roads.

Hinton, W. Va.—Summers county, Greenbrier district, votes July 31 on \$150,000 bonds for road construction.

Lafayette, Ga.—Walker county votes July 7 on \$75,000 bonds to construct roads.

Savannah, Ga.—Chatham county will vote in August on \$375,000 bonds to construct road to Tybee and \$225,000 for permanent roads.

Stanford, Ky.—Lincoln county votes September 18 on \$130,000 bonds to construct roads.

Contracts Awarded.

Baton Rouge, La.—City awarded \$200,000 contract for paving on 12 miles of streets.

Baton Rouge, La.—City awarded \$150,000 contract to construct about 11 miles of gravel streets with asphalt binder and \$50,000 contract for 20,000 yards of vertical fiber brick paving.

Belton, Tex.—Bell county awarded contract for seven miles of road in Holland precinct.

Catlettsburg, Ky.—Boyd county awarded \$24,000 contract to construct one mile of paved road; concrete base.

Clarksville, Tex.—City awarded \$65,000 contract for 25,000 square yards of Thurber brick paving.

Dallas, Tex.—City awarded \$130,545 paving contracts.

Elkton, Md.—Cecil county awarded \$65,104.46 contracts for road construction.

Richmond, Va.—City awarded contracts aggregating \$50,000 for street improvements.

Selma, Ala.—Dallas county awarded contract to construct 10½ miles of pike road.

Contracts to Be Awarded.

Carlisle, Ky.—Nicholas county opened bids June 29 to reconstruct 7.12 miles of road, etc.

Cartersville, Mo.—City will pave 10 blocks, etc.; estimated cost \$6000.

Chattanooga, Tenn.—City receives bids until July 9 to repave portions of two streets; about 20,000 square yards; creosoted wood block or sheet asphalt paving.

Cumberland, Md.—City will construct about 270 feet of concrete curb and 225 square yards of concrete sidewalks.

Fort Worth, Tex.—City receives bids until July 6 for 3321 square yards of street paving; asphalt macadam or asphaltic concrete pavement.

Kissimmee, Fla.—Osceola county invites bids until July 5 to construct two and one-half miles of brick road; estimated cost \$35,000.

Longview, Tex.—Gregg county receives bids until July 14 to grade and surface 15 miles of Shreveport-Dallas highway.

Mansfield, La.—Town receives bids until July 6 to construct about 10,130 square yards of street paving, 3500 linear feet of curbing, etc.

Memphis, Tenn.—City opened bids June 29 for 7800 square yards paving, etc.

Nashville, N. C.—City opened bids June 26 for 1250

square yards concrete sidewalk and 3100 linear feet of concrete curb.

San Antonio, Tex.—City will pave 11 streets.

Sarasota, Fla.—City receives bids until July 24 to construct 14,000 square yards of paving.

Tampa, Fla.—City receives bids until July 6 for 6400 square yards of sand-asphalt paving.

Government to Build Experimental Roadway.

In order to obtain certain specific data covering various classes of road construction, the Office of Public Roads, U. S. Department of Agriculture, has awarded contract to Wm. P. McDonald Construction Co. of New York at \$18,362 for building an experimental road, approximately 1¼ miles long, on the Russell road in Alexandria county, Virginia.

This work will be divided into two sections, two experiments being conducted in Section "A" and five experiments in Section "B." Briefly summarized, the experiments will be as follows:

Section "A"—Experiment No. 1.—Bituminous macadam, penetration method, water-gas tar to be used as a binder and for the seal coat. Length, approximately 1600 feet.

Experiment No. 2.—Bituminous macadam, penetration method, water-gas tar to be used as a binder and oil asphalt for the seal coat. Length, approximately 1820 feet.

Section "B"—Experiment No. 3.—Bituminous macadam, penetration method, coal tar binder and coal tar for seal coat. Length, approximately 2100 feet.

Experiment No. 4.—Bituminous macadam, penetration method, coal tar binder and oil asphalt for seal coat. Length, approximately 1800 feet.

Experiment No. 5.—Bituminous gravel macadam, gravel to be grouted with sand-asphalt or sand-tar mixture. Length, 500 feet.

Experiment No. 6.—Bituminous gravel macadam, penetration method. Length, 500 feet.

Experiment No. 7.—Gravel construction with surface treatment of asphaltic petroleum. Length, 500 feet.

For this work the U. S. Department of Agriculture will furnish bituminous materials, cast-iron pipe and corrugated metal pipe. All other materials and equipment required will be supplied by the contractors.

The specifications clearly define the character of the various materials to be used and the methods to be followed in constructing the experimental sections of the roadway. The grading will be started within 10 days after the execution of the contract, and this is expected to be completed by September 1. Specifications also provide that no bituminous surface shall be laid after November 1, and that the entire work shall be finished on or before December 1.

Good Roads Rally at Rome.

In extending an invitation to the Good Roads Rally at Rome, Ga., on July 5, H. A. Wheeling, secretary of the Rome Chamber of Commerce, states that this meeting will be second in importance to none ever held in the South. He adds that the enthusiasm manifested in the Rome to Birmingham, Montgomery and Gulf of Mexico highway equals that of the Dixie highway, and that large and enthusiastic delegations are expected from all points along the proposed route. An attractive program is being arranged. The invitation is being issued by J. M. Graham, chairman of the highway committee of the Rome Chamber of Commerce; T. J. Simpson, president of the Rome Automobile Association, and T. E. Grafton, president of the Rome Chamber of Commerce and chief engineer of the Dixie highway.

Pan-American Road Congress.

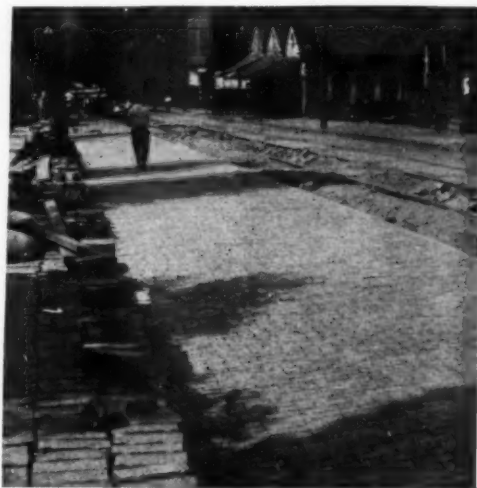
Invitations are being sent by the executive committee, chairman, Charles W. Gates, Governor of Vermont, to the governors of each State, lieutenant-governors of the Canadian provinces and presidents of the South American republics, to attend in person and to name delegates to the Pan-American Road Congress in Oakland, Cal., September 13-17. This congress will be held under the joint auspices of the American Road Builders' Association and the American Highway Association, in co-operation with the Tri-State Good Roads Associa-

tion, the membership of which covers the States of California, Oregon and Washington.

It is expected that delegates from every State and Canadian province and a large number of the South American republics will attend this great gathering in the interest of good roads. The program which is being prepared covers thoroughly the subject of road building and street improvement. The papers and discussions will be handled by the men who are the acknowledged experts in their respective lines. It is believed that the congress will bring together the largest number of men interested in highway and street improvement ever assembled at any time or place. Special trains are being arranged for the accommodation of delegates from the East.

Modern Brick Street in Atlanta.

South Pryor street in Atlanta, Ga., was recently paved with brick. The accompanying photograph shows a section of the street with the brick laid just prior to grouting. Wire-cut-lug paving blocks were used in this work, and were furnished from the Robbins, Tennessee, plant of the Southern Clay Manufacturing Co. of Chattanooga. All of the construction work was performed



LAYING BRICK STREET IN ATLANTA, GA.

by convicts under the guidance of two skilled paving mechanics, with supervision and inspection by city and county authorities. The pavement was laid according to the most improved specifications for brick paving, including cement grout filler in the joints, thus presenting a practically monolithic wearing surface.

For a Mississippi Highway Department.

Leading citizens of Mississippi have become interested in the importance of a State highway department, and they are now conducting a campaign to secure one for their State. Their organization, the Mississippi Highway Association, is now distributing an interesting illustrated booklet relative to the association's purposes and to improved highway construction in general. All the commercial clubs of Mississippi are combining their efforts with those of the association. The booklet mentioned aims to show the wide scope and attention that good roads are being given and to emphasize the fact that permanent smooth highways are of great importance in promoting the best interests of the State. The various subjects considered in the booklet include the destiny of roads, assets of good roads, State and national aid, opinion of influential men, road materials in Mississippi, inadequate State laws, Mississippi report to National Road Congress, etc. D. J. Morrison, Jackson, Miss., is president of the Mississippi Highway Association, and Dr. J. W. Provine, Clinton, is secretary.

A \$203,000 Paving Contract.

Paving to cost \$203,000 has been contracted for by the city of Baton Rouge, La., John J. Mundinger, city engineer. G. W. Prutsman of Baton Rouge is the contractor, the award being as follows: \$150,000 for constructing 11 miles of gravel streets with asphalt binder and \$50,000 for 20,000 yards of vertical fiber brick paving.

RAILROADS

[A complete record of all new railroad building in the South will be found in the Construction Department.]

CLINCHFIELD EXTENSION OPENED.

New Through Route Between the South and the West—Cost \$5,500,000.

The Carolina, Clinchfield & Ohio Railway extension from Dante, Va., to Elkhorn City, Ky., 35 miles, begins operating today, July 1, according to official announcement. Contracts for this remarkable railroad achievement were let in June, 1912, and the work has been pushed with vigor through one of the most difficult and baffling regions ever encountered by engineers. Marvelous as was the Clinchfield's negotiation of the North Carolina mountains, and amid their highest ridges, the Elkhorn extension has fully equaled that previous achievement so far as physical obstacles go. An officer of the line said when the surveys were in progress that the work would be quite as difficult as that in North Carolina, and experience has amply verified the statement.

Although this short extension has cost the large sum of \$5,500,000, it accomplishes so much that the expenditure is comparatively insignificant. The Clinchfield now provides a direct short route through the Appalachian ranges to the West and the Great Lakes. The output of the immense coal fields which it traverses in the southwestern part of Virginia will now have an outlet to the West and Northwest, whereas its only outlet has hitherto been South and Southeast. Moreover, business going via this line will, it is stated, make a large saving of time as well as distance, the length of haul being cut from 100 to 175 miles as compared with the old routes, while passenger trains can save five hours and freight trains about two days. These impressive figures are given out after an inspection trip made by a party of prominent financial and other business men over the extension. The line is built in the most substantial manner with 90-pound rails, steel and concrete bridges, and heavy equipment of large capacity. The maximum grade is but 1.2 per cent., so that with pusher service where the grade is against the traffic 100-car trains can be handled.

For many years the idea of building a railroad through the Breaks of the Big Sandy River had been entertained, but the obstacles interposed by nature were so great that its realization had to be deferred until capital could see its way clear to reap profit from the investment of the large amount of money required for construction. As far back as 1881 engineers located a route between Dante and Elkhorn, and then in 1900 several other routes were surveyed to discover the most desirable line as to curves and grades, and it is said that rather than adopt a route which would have saved a million and a half of dollars, but that would not have been in keeping with the rest of the road southward, the company decided upon the best type of construction possible in that region, and the completed result will now be enjoyed in all its benefits.

The big piece of work on the new line was the boring of Sandy Ridge tunnel immediately north of Dante. It is over a mile and a half long, but there are 20 other short tunnels on the line to Elkhorn City. Proceeding from Dante the extension, after going through the big tunnel, enters upon the headwaters of McClure's Fork of the Big Sandy and follows that for about two-thirds of the distance, then entering upon Russell Fork, which is followed to Elkhorn, where connection is made with the Chesapeake & Ohio Railway, which will also reap large benefits from the work which the Clinchfield has done. The two are united by traffic contracts. Thus via these roads and their connections a wonderful new route is established between the Southern Atlantic seaboard and the West. The country traversed by the extension is wild and beautiful.

New coal mines will be opened on and near the new road, and there may be expected a large development in this way, especially since the demands for coal for export have so tremendously increased of late.

Mark W. Potter of New York is president of the Clinchfield road; J. J. Campion, vice-president and traffic manager; I. McQuilkin, vice-president and comptroller; L. H. Phetteplace, general manager, and Ward Crosby, chief engineer.

TERMINAL LINE FOR CURTIS BAY.

A Railroad Which Will Also Operate Car Floats in Baltimore Harbor.

The Chesapeake & Curtis Bay Railroad Co., capital \$50,000, has been incorporated to build and operate a terminal railroad at South Brooklyn and Curtis Bay, Md., which are suburbs of Baltimore on the Patuxent River within a few miles of Chesapeake Bay. The parties interested in the enterprise are also concerned in several manufacturing companies in the district where the line will operate, and it is designed to obtain for them economies in the handling of cars to and from their respective plants.

About five miles of tracks will be constructed, this mileage including switches in the yards of the various industries. Barges towed by tugboats will be operated in connection with the terminal railroad, so that cars may be readily transferred between it and any railroad terminating on the harbor of Baltimore. The only railroad operating a direct line to Curtis Bay and South Brooklyn is the Baltimore & Ohio, but the barges carrying cars will afford direct connection between the factories and the Pennsylvania and the Western Maryland lines.

John H. Zink, manager of the United States Asphalt Refining Co. of Curtis Bay, is one of the incorporators of the terminal railroad company, and the others are J. Cookman Boyd, attorney-at-law; Aubrey Beard and Richard B. Pue, all of Baltimore, and Richard D. Upham of New York. The probable cost of construction of the terminal lines is estimated at \$200,000.

ROAD TO NEW COAL MINES.

Developments Under Way by Consolidation Company in Helens Run Region.

According to a report from Fairmont, W. Va., engineers for the Western Maryland Railway, who have been working for about two months on surveying a route from a connection with the Baltimore & Ohio Railroad at Farmington to the new coal fields in the Helens Run region, have almost completed their work, and it is expected that bids for construction will soon be invited. The branch will be seven miles long, and the coal hauled out over it will be taken over the Baltimore & Ohio Railroad to the Western Maryland's main line between Cumberland and Connellsville, and thence to its destinations.

The Consolidation Coal Co. is sinking two shafts in the new coal field, and it is also building two mining towns to house and otherwise provide for the extensive forces required to get out the coal. These towns, according to the report, are growing rapidly, and, besides restaurants, stores and other places of business are being established and opened, creating a picture of activity and enterprise. The Fairmont Gas Co. has laid a pipe line four or five miles long to convey gas for heating and lighting the new communities. One town is named Ida May; the other, Carolina.

B. & O. Officers' Annual Meeting.

That a brighter outlook is dawning is the report which more than 300 officials of the Baltimore & Ohio Railroad system made in their annual meeting at Deer Park, Md., last week as from the industrial and agricultural communities in which they are handling traffic to and fro over its 5000 miles of line. Feeling that an era of prosperity is at hand, the problems of providing transportation service with greatest benefit to the public and with economy in operations allowing a profitable return to investors with surplus sufficient to make needed improvements were discussed by general officers and others from different localities.

A. W. Thompson, vice-president in charge of operation, presided, and among others of his staff who attended were Vice-President C. C. F. Bent of the New York properties, General Manager C. W. Galloway of Baltimore and General Manager J. M. Davis of Cincinnati, accompanied by men of every official rank, who exchanged views concerning railway service.

A letter from President Daniel Willard was read, reviewing the betterments made to the Baltimore & Ohio

system during the last five years at a cost of more than \$100,000,000, approximately half of which was spent for additional tracks and terminals, the reduction of grades and other physical economies, while a like amount went for locomotives and cars for both passenger and freight service. He expressed great satisfaction over the economic results achieved through this expenditure of capital, and he held out hope for even greater results in the future.

Order to Sell Railroad.

The New Orleans, Mobile & Chicago Railroad, which has been in a receivership for the past 18 months, has now been ordered to be sold by action of the Federal Court at Mobile. The date is not yet agreed upon, but the sale will be conducted by H. A. Lockwood, special master, representing the court. The line is 403 miles long from Mobile, Ala., via Beaumont, Laurel, Newton and other points in Mississippi to Middleton, Tenn. It is of standard gauge, and has 58 locomotives and 1945 cars. The bonded debt is \$14,293,800, with interest, and it is to satisfy this that the sale is directed. W. F. Owen, formerly president, is receiver. The Metropolitan Trust Co. of New York is trustee of the mortgage.

New Freight Station at Richmond.

The Southern Railway has opened at Richmond, Va., according to a report from there, its new outbound freight station built on the site of the old passenger station at 14th and Mill streets. The building is 480 feet long and 40 feet wide, with an office structure of two stories at one end. There are three long loading platforms, with tracks on both sides, so that two trains can be loaded simultaneously. This is for the handling of merchandise traffic. Every facility is provided for expediting all package freight. The old outbound freight warehouse is to be used now for a tobacco shed. This kind of freight will thus be kept separate from other classes of traffic and handled to greater advantage. In addition to these improvements, the railroad company has built a storage yard for 350 cars at Belle Isle in South Richmond, and it has enlarged the old South Richmond yards by 150 cars. A brick passenger and freight station has also been erected there.

Railroad Earnings Per Mile Show Gains.

Returns filed by railroads covering their operations in April, 1915, have been made public by the Interstate Commerce Commission, and show that net operating income for that month increased \$33 per mile as compared with the same month of last year. This, however, has been mainly secured through reductions of expenses, because the decrease in operating revenues for the month (\$230,997,430) exhibits a decrease of \$4,363,078 from April, 1914. The data is for a total of 228,736 miles of railroad, or about 90 per cent. of the gross railroad mileage of the United States.

Improvements to Texas System.

The board of directors of the Missouri, Kansas & Texas Railway at Dallas recently approved plans to spend between \$200,000 and \$300,000 in Texas this summer, practically all of it for ballasting track and for other betterments to the permanent way. The company will also receive some important additions to its supply of motive power, as deliveries will be made of the 45 new locomotives (33 freight and 12 passenger) which were ordered several months ago at a cost of approximately \$800,000.

Receiver for a Florida Line.

Wm. B. Winslow, 55 Liberty street, New York, has been appointed receiver for the Florida Railway, a line 52 miles long from Perry to Live Oak, Fla., its president and general manager being Frank Drew of Live Oak. The suit which caused the naming of a receiver was filed by Carl J. Sauer of Elizabeth, N. J., in the Federal District Court at New York on behalf of himself and

other bondholders. The bonds amount to \$2,508,000, and it is alleged that the interest is in default. Besides the railway company, the suit is directed against the Columbia Trust Co., the Suwannee & San Pedro Railroad Co., the Live Oak & Gulf Railway Co., the St. Mary's, Suwannee & Gulf Railway Co., the Florida Construction & Realty Co. and the Union Trust Co. of Florida. The railway is a standard-gauge road, and has 4 locomotives and 65 cars.

A \$3,500,000 RAILROAD BRIDGE.

Construction of Burlington Structure Over the Ohio Now Resumed.

Construction has been resumed on the double-tracked bridge of the Paducah & Illinois Railroad Co. over the Ohio River from Metropolis, Ill., to a point on the Kentucky shore about 12 miles from Paducah, to which city the new railroad is being built to afford a connection between the Burlington system and the Nashville, Chattanooga & St. Louis Railway. The Union Bridge & Construction Co. of Kansas City, Mo., is erecting the substructure for the bridge, while forces of the railroad company are putting in the foundations for the approaches. The cost of the bridge complete will be about \$3,500,000. It will be 5650 feet long. C. H. Carlidge, 547 W. Jackson Boulevard, Chicago, is bridge engineer for the Burlington, and has general charge of the work.

New Equipment, Etc.

Cumberland & Manchester Railroad contemplates purchasing a locomotive and some flat cars. G. F. Heidrick, Barbourville, Ky., is president.

Seaboard Air Line is reported in the market for 4 dining-cars.

El Paso Southwestern Railway has ordered 8000 tons of 90-pound rails from the Colorado Fuel & Iron Co., Denver.

TEXTILES

Correspondence relating to textile matters, especially to the cotton-mill interests of the South, and items of news about new mills or enlargements, special contracts for goods, market conditions, etc., are invited by the MANUFACTURERS RECORD. We shall be glad to have such matters at all times, and also to have any general discussion relating to cotton matters.

To Build \$50,000 Hosiery Mill.

A company capitalized at \$50,000 will build a hosiery knitting mill at Valdosta, Ga., using electrical power from a local transmission system. It will erect a 200x70-foot building planned for future additions and install about 100 knitting machines, with complete dyeing and finishing equipment. R. B. Oliver and Knox Burger of Maryville, Tenn.; E. P. Rose, George W. Varn, A. J. Strickland and others of Valdosta will form the company. Messrs. Oliver and Burger are experienced manufacturers of hosiery and were interested in the industrial advantages of Valdosta through the efforts of J. M. Ashley, secretary Valdosta Chamber of Commerce; H. R. Buckey, industrial agent of the Georgia Southern & Florida Railway, and J. T. Blalock, president of the Southern Bank & Trust Co., Valdosta.

The Cotton Movement.

In his report for June 25 Col. Henry G. Hester, secretary of the New Orleans Cotton Exchange, shows that the amount of cotton brought into sight during 329 days of the present season was 14,970,330 bales, an increase over the same period last year of 161,263 bales. The exports were 8,070,872 bales, a decrease of 776,293 bales. The takings were, by Northern spinners, 2,819,036 bales, an increase of 184,511 bales; by Southern spinners, 2,997,785 bales, a decrease of 33,092 bales.

J. A. Goodman and Will Flowe, Concord, N. C., propose forming company to build cotton mill.

ADDING TO SOUTHERN SPINDLES.

Total for Second Quarter Is 101,000 Spindles and 2550 Looms, a \$2,525,000 Investment.

The second quarter of the year has ended, and a consideration of the announcements of additions to Southern spindles indicates that an investment of approximately \$2,525,000 will be required for this purpose. This expenditure (for the months of April, May and June) is entirely for adding to the manufacturing facilities of established mills, 10 in number, no new companies having been organized during these three months. The reports for the quarter of additions to equipment present a total of 101,000 spindles and 2550 looms. Of this number, 69,000 spindles and 950 looms (an investment approximating \$1,725,000) are credited

to five Georgia enterprises, while 17,000 spindles and 1600 looms, (an investment approximating \$425,000) are credited to four North Carolina plants. Alabama is credited with one mill as adding 15,000 spindles to its plant, the cost of this installation to be about \$375,000.

For the entire half-year of 1915 the spindles total 171,900, with 3170 looms, calling for an investment of about \$4,297,500. The first quarter of 1915 presented a total of 70,900 spindles and 620 looms, a \$1,772,500 investment, 25,000 spindles with accompanying machinery and a \$625,000 expenditure being for a new company, and 45,900 spindles and 620 looms, with \$1,147,500 expended, for additions to four established mills.

Announcements for the second quarter of 1915 are briefly summarized in the following table:

Georgia.			
Name.	Location.	Spindles.	Looms.
*West Point Manufacturing Co.	West Point.	25,000	500
*Ensign Cotton Mills.	Forsyth.	6,000	...
*Crown Cotton Mills.	Dalton.	15,000	450
*Hamburger Cotton Mills.	Columbus.	8,000	...
*Thomaston Cotton Mills.	Thomaston.	15,000	...
		69,000	950
North Carolina.			
*Thread Mills Co.	Spray.	...	600
*Thread Mills Co.	Draper.	...	1,000
*Wiscasset Mills.	Albemarle.	12,000	...
*French Broad Manufacturing Co.	Asheville.	5,000	...
		17,000	1,600
Alabama.			
*Coosa Manufacturing Co.	Piedmont.	15,000	...
		70,900	620
Total for first quarter of 1915.		101,000	2,550
Total for second quarter of 1915.		171,900	3,170
Total for six months of 1915.		171,900	3,170
*Established mills enlarging.			

North Carolina Cotton Manufacturers.

Cotton manufacturers representing more than 2,000,000 spindles were present at the annual convention of the North Carolina Association of Cotton Manufacturers at Charlotte last week. They included leading cotton mill owners and managers of the State, besides whom there were visitors (from other sections) interested in Southern cotton manufacturing and allied interests. Mayor Kirkpatrick of Charlotte made the address of welcome and referred in an interesting manner to the South's textile manufacturing industry, including statements mentioning that of the South's 800 cotton mills, there are about 400 within a radius of 100 miles of Charlotte, these plants representing an investment of \$300,000,000 and employing 350,000 operatives, receiving in wages \$275,000,000 each year. He also presented figures indicating the great quantities of cotton products being consumed for war purposes in Europe, which great consumption will necessarily be replaced by the South's cotton crops and mills. Herman A. Metz of New York, president of the Farbwerke-Hoechst Company, addressed the meeting on the "Dyestuff Situation," and included some interesting facts on this subject, especially as to the decreased supply of dyestuffs and chemicals because of the European war and the prospects for meeting the demands. Capt. David Clark of Charlotte told the association about the proceedings of the committee investigation at Washington, when he rebutted misrepresentations of Southern cotton mill conditions. A resolution thanking him for these efforts was passed by the members of the association.

Another resolution adopted was as follows:

"Resolved, That this association pledges itself to encourage a faithful compliance with the child labor laws of the State and to assist in enforcing them.

"Second, We respectfully request every Superior Court judge in the State to instruct his Grand Jurors in each of his courts to investigate and return all violations of said laws in their knowledge.

"Third, That we ask the County Superintendent of Education to report and each Solicitor to prosecute all violations of these laws.

"Fourth, That this association continues to sincerely recommend both scholastic education and practical training, and condemns idleness as the greatest curse of civilization. We regard with great pride the compulsory education law which this association recommended unanimously and supported, and this association again earnestly advises that the age limit be raised to 13 years, and that it be rigidly enforced by the local authorities.

"Fifth, That a copy of these resolutions be sent to

every manufacturer, every judge, every Solicitor and every County Superintendent in the State."

Officers for the ensuing year were elected as follows: Col. A. A. Thompson, Raleigh, president; W. C. Ruffin, Mayodan, first vice-president; J. L. Patterson, Roanoke Rapids, second vice-president; Caesar Cone, Greensboro, third vice-president; T. L. Black, Charlotte, secretary-treasurer until the executive committee names a permanent official.

Southern Textile Association.

Nearly 400 delegates attended the fifth annual meeting of the Southern Textile Association at Asheville, N. C., on June 25 and 26. President E. E. Bowen of Greer, S. C., presided at the formal sessions. Several members presented interesting discussions of subjects relating to the progress of the Southern textile manufacturing industry and its prospects for the future. "The Relationship of the Treasurer to the Other Officials of the Corporation" was the subject of an address by Capt. Ellison A. Smyth, Greenville, S. C., president of the South Carolina Cotton Manufacturers' Association. W. R. Lynch, Spray, N. C., manager of the department of welfare and health, spoke on welfare work, and told of the importance of activities in this direction in cotton-mill centers. C. W. McSwain of the textile department of Clemson College, spoke on "The Textile School: Its Place in the Industry." Other subjects given consideration were the addresses of H. P. Meikelham, manager of the Massachusetts Mills in Georgia, Lindale, Ga., on "Clean Up the Village;" W. C. Dowd of Charlotte, on "What the Textile Industry Has Done for the South," and M. Hocking of Asheville, on "The Finishing End of the Cotton Mill," this address being entirely technical. One of the events of the meeting was the awarding of prizes for the best display of cotton goods in the wearing apparel of the visitors, most of those in attendance being clad in cotton garments. "Wear clothing manufactured from cotton goods" was the theme of many informal gatherings of the members and Asheville people throughout the meeting. A feature of the meeting was a display of cotton goods for clothing.

Officers for the coming year were elected as follows: President, W. M. Sherrod, Williamston, S. C.; vice-president, Frank E. Heyner, Alexander City, Ala.; board of directors, Robert Bowe, chairman, Greenville, S. C.; C. L. Chandler, Rhodiss, N. C.; Gordon Cobb, Inman, S. C.; Arthur Dixon, Gastonia, N. C.; L. H. Brown, Knoxville, Tenn.; W. S. Morton, Dallas, Tex.; secretary, A. B. Carter, Greenville, S. C.; treasurer, Marshall Dilling, Siluria, Ala.

Construction Department

IN ORDER TO FOLLOW UP

Properly the Construction Department items, please bear in mind the following statements:

EXPLANATORY

The MANUFACTURERS RECORD seeks to verify the items reported in its Construction Department by full investigation. It is often impossible to do this before the item must be printed or else lose its value as news, and in some items it is found advisable to make statements as "reported" or "rumored," and not as positive information. If our readers will note these points they will see the necessity of the discrimination. We are always glad to have our attention called to errors that may occur.

HOW TO ADDRESS

The name of one or more incorporators of a newly incorporated enterprise should always be written on letter addressed to the official headquarters or to the town of the parties sought, as may be shown in the item. Sometimes a communication merely addressed in the corporate or official name of a newly established company or enterprise cannot be delivered by the postmaster. By following these general directions the postoffice will generally be enabled to deliver your mail promptly, although it is inevitable that some failure by the postal authorities to deliver mail to new concerns will occur, as our reports are often published before new companies are known and before they have any established office for the receipt of mail.

WRITE PERSONAL LETTERS

In communicating with individuals and firms reported in these columns a letter written specifically about the matter reported will receive better and quicker attention than a circular. In most instances a return postal card or addressed and stamped envelope should be enclosed with letter.

In correspondence relating to information published in this department, it will be of advantage to all concerned if the Manufacturers Record is mentioned.

DAILY BULLETIN

The Daily Bulletin of the Manufacturers Record is published every business day in order to give the earliest possible news about new industrial, commercial, building, railroad and financial enterprises organized in the South and Southwest. It is invaluable to manufacturers, contractors, engineers and all others who want to get in touch at the earliest moment with new undertakings, or the enlargement of established enterprises. The subscription price is \$25 per year.

All advertising contracts in the Manufacturers Record for three months or longer include a subscription to the Daily Bulletin for the contract period, as well as a subscription to the Manufacturers Record.

BRIDGES, CULVERTS, VIADUCTS

Fla., Miami.—City votes Aug. 19 on \$150,000 bonds to construct 2 bridges over Miami River to cost \$75,000 each; B. H. Klyce, City Engr. (See Miscellaneous Construction.)

Ky., Paducah.—Paducah & Illinois R. R. Co., C. H. Cartledge, Ch. Engr., 547 W. Jackson Blvd., Chicago, has reinstated construction of double-track railway bridge across Ohio River from Metropolis, Ill., to a point about 12 mi. from Paducah; Union Bridge & Construction Co., Sharp Bldg., Kansas City, Mo., is proceeding with erection of substructure; railroad company's force is placing foundations for approaches. (This structure was noted in Manufacturers Record July 9, 1914, to cost about \$3,500,000; length, including approaches, 5650 ft.; contract let to Union Bridge & Construction Co. for pneumatic piers costing about \$1,100,000.)

Miss., Meridian.—City votes July 23 on \$25,000 bonds to construct concrete bridges and sanitary sewers. Address The Mayor. (Lately noted.)

N. C., Asheville.—Buncombe County Commissioners let contracts aggregating \$8905 to construct 6 bridges as follows: Roanoke Iron Works, Roanoke, Va.—Fairview bridge at Fairview, \$1490; Fairview bridge at Bagwell's, \$1165; Bull Creek bridge, near Swananoa, \$1385; Nashville Bridge Co., Nashville, Tenn.—Democrat bridge over Ivy Creek, \$1575; Hunt Hole bridge, near Hurst, on Ivy Creek, \$1100; Sandy Mush bridge, \$2190.

Okla., Eufaula.—Missouri, Kansas & Texas Ry., F. Ringer, Engr. M. W. Parsons, Kan., will construct bridge in connection with improvement of railroad between Canadian and Eufaula; let steel contract to Wisconsin Bridge & Iron Co. of North Milwaukee, Wis.

S. C., Charleston.—Charleston County Sanitary and Drainage Com., Reid Whitford, Secy., let contract Simons-Mayrant Co. of Charleston to construct drawbridge across Stono River at John's Island Ferry, connecting John's and Wadmalaw islands; trestle type; creosoted piles; concrete pivotal piers; steel superstructure; length 600 ft.; 15-ft. center pier; 2 draws, 60 ft. each; cost about \$9000.

Tenn., Knoxville.—Knox County Road Com. petitioned Finance Committee for additional appropriation of \$22,000 to construct concrete bridges.

Tenn., Memphis.—Koehler Bros.-Fowler Construction Co. of Memphis is lowest bidder at \$22,682.75 to construct outfall culvert on Bayou Gayoso from pumping station to Wolf River; E. H. Crump, Mayor. (W. R. Hughes & Co., lately noted as lowest bidders, rejected contract.)

Tex., Austin.—City Com. contemplates constructing low bridge over Shoal Creek at State St. crossing on Camp Mabry Rd.; estimated cost \$2500; M. C. Welborn, City Engr.

Tex., Bryan.—Brazos County Commrs. let contract Austin Bros. of Dallas to construct Pitts bridge across Brazos River; estimated cost \$7500.

Tex., Port Sullivan.—Milam County Commrs., Cameron, Tex., and Robertson County Commrs., Franklin, Tex., will reconstruct bridge across Brazos River at Port Sullivan; receive bids at Hearne, Tex., July 14; John Watson, Milam County Judge; J. L. Goodman, Robertson County Judge. (See Machinery Wanted—Bridge Construction.)

Tex., Port Lavaca.—City votes July 27 on \$17,000 bonds to construct bridges, roads and streets; H. C. Innis, Mayor. (Lately noted.)

Va., Bowling Green.—Caroline county will construct bridge 60 ft. long over Smoot's Mill Pond, 7 1/4 mi. from Milford; bridge 36 ft. long over Big Swamp, 3 1/4 mi. from Milford, and bridge 44 ft. long over Temple Mill Stream, 10 mi. from Guinea; all to have reinforced concrete superstructure, plain concrete substructure and 12-ft. roadway; also steel bridge, beam spans, over South River, 5 mi. from Rixey; length 145 1/2 ft.; 12-ft. roadway; concrete substructure; bids until July 8; G. P. Coleman, State Highway Commissioner, Richmond. (See Machinery Wanted.)

Va., Coeburn.—Dickenson county will construct bridge across Cranes Nest River, 12 mi. from Coeburn; length 81 ft. 9 in.; 12-ft. roadway; concrete; alternate bids on cement rubble; bids until July 8; G. P. Coleman, State Highway Commr., Richmond. (See Machinery Wanted—Bridge Construction.)

Va., Coeburn.—Wise County Commrs., Wise, Va., and Dickenson County Commrs., Clintwood, Va., will construct bridge across Cranes Nest River, 11 mi. from Coeburn; 71 ft. 9 in. long; 12-ft. roadway; concrete; alternate plan on cement rubble; bids until July 8; G. P. Coleman, State Highway Commissioner, Richmond. (See Machinery Wanted—Bridge Construction.)

Va., Lynchburg.—Chesapeake & Ohio Ry., F. I. Cabell, Ch. Engr., Richmond, Va.; Southern Ry., W. H. Wells, Ch. Engr. of Construction, Washington, D. C., and Norfolk & Western Ry., J. E. Crawford, Engr. Bridges and Roadway, Roanoke, Va., co-operating with city, will erect bridge described in Manufacturers Record November 12, 1914; railroads to build bridge, under charge of engineering department Norfolk & Western Ry.; construction to begin prior to Dec. 31, 1915; reinforced concrete structure 1700 ft. long, crossing James River, and connecting city with Amherst county; bridge to begin at 7th and Commerce Sts., have arm extending to Cabell St., and inclines into Jefferson and Orange Sts.; total cost about \$300,000.

Va., Radford.—Pulaski county and city of Radford plan to construct standard highway bridge across New River of following dimensions: Length across water, 600 ft.; steel trestle approach 100 ft. on land; height above mean low water, 35 ft.; piers on water to be steel cylinders filled with concrete; water is shallow, with solid rock bottom; invites correspondence with builders; Wm. Ingles, Chrmn. Committee, Drawer E, Radford. (See Machinery Wanted—Bridge Construction.)

CANNING AND PACKING PLANTS

Ala., Andalusia.—Andalusia Packing Co., capital \$125,000, organized with following directors: T. E. Henderson, A. C. Darling, S. G. Milligan and others; will build packing plant. (T. E. Henderson and others lately reported interested in plan for \$125,000 packing plant.)

Ark., Mansfield.—Mansfield Canning Co., capital \$10,000, inceptd. by J. P. Hodge and others.

Ark., Mansfield.—Mansfield Canning Co., J. H. Caldwell, Pres., will erect cannery; 36x30 ft.; frame; metal roof; now building; daily capacity 20,000 to 30,000 quart cans; ordered canning equipment; steam pressure; later plans to install creamery. (Lately noted organized with \$10,000 capital.)

Fla., Bayard.—Duval Farm & Livestock Co., Jacksonville, contemplates establishing meat-packing plant.

Fla., Sarasota.—Taylor J. Smith, Union City, Ga., will establish plant to can fruits and vegetables.

Mo., Nevada.—Vernon Packing & Creamery Co., capital \$44,000, inceptd. by F. N. Davis, E. T. Letton and A. D. Crabtree.

N. C., Morehead City.—Woodland & Co. will install small cannery for oysters and vegetables. (See Machinery Wanted—Canning Plant.)

Tenn., Knoxville.—East Tennessee Packing Co. has plans by R. F. Graf, Knoxville, for addition to plant.

Tex., Childress.—Commercial Club voted to install cannery.

CLAYWORKING PLANTS

Ala., Tuscaloosa.—Bricks.—E. J. Ostling, E. W. Wright, W. E. Bowers and others will establish brick plant; daily capacity 120,000 bricks; cost \$25,000; plan to establish pipe and drain tile plant later.

Ala., Tuscaloosa.—Bricks.—Tuscaloosa Brick Co., 516 Alston Bldg., organizing to establish \$25,000 plant at Albert City, 3 1/2 mi. from Tuscaloosa, to manufacture common brick; daily capacity 50,000; officers not elected; those interested include E. J. Ostling & Son, G. B. Wright and W. E. Bowers of Tuscaloosa, and Lorenzo Davis and R. A. Chapman, Montgomery, Ala. Address E. J. Ostling & Son, 516 Alston Bldg., Tuscaloosa.

COAL MINES AND COKE OVENS

Ark., Midland.—Midland Coal Co., capital \$10,000, inceptd. by John E. Finney, T. A. Freeze, M. A. Finney and R. A. McFadden.

Ky., Ashland.—Kentucky Solvay Coke Co., Solvay, N. Y., is reported to construct 53

additional coke ovens, doubling present plant.

Ky., Hazard.—Campbell Coal Co. of Atlanta, Ga., will establish coal-mining plant; operate as Blue Diamond Coal Co.

Okla., Collinsville.—Profit Sharing Coal, Oil & Gas Co., capital stock \$500,000, inceptd. by J. D. Waid, F. S. Hoxie, A. R. Rolston and others.

W. Va., Charleston.—Kanawha Splint Coal Co., authorized capital \$25,000,000, inceptd.; to be organized by capitalists reported to have concluded contracts for about 250,000 acres, 52 mi. railway, 15 coal mines, etc.; properties said to include Marnet Coal Co.'s lands and mines in West Virginia, its terminals at Cincinnati, its West Virginia & Southern R. R., Blue Creek Coal & Land Co., Virginia Coal Co., Mill Creek Coal Co., Kanawha & West Virginia Ry., Mill Creek Cannel Ry., etc.; rumors state negotiations are pending for additional properties to increase this merger by \$10,000,000 holdings, entire enterprise then to be taken over by Chicago, Columbus, Toledo and New York capitalists. W. L. Benton of Springfield, Mass., Andrew ported interested; W. D. O'Grady, M. E., 1084 Amsterdam Ave., New York, is negotiating this proposition. (Lately incompletely mentioned.)

W. Va., Huntington.—Frank Enslow of Enslow, Fitzpatrick & Baker and W. H. Cunningham, Consult. Engr., are reported as conferring with English syndicate relative to sale of several of largest coal properties in New River and Kanawha coal fields.

CONCRETE AND CEMENT PLANTS

D. C., Washington.—Concrete Railroad Ties, Frank R. White Mfg. Co., capitalized at \$1,000,000, inceptd.; J. Walter Gilway, Pres., Strathmore, Park Heights Ave. Ext., Baltimore, Md.; proposes manufacturing concrete railroad ties and fastening device.

COTTON COMPRESSES AND GINS

Ala., Hartsells.—Hartsells Oil & Fertilizer Co., C. O. Jagers, Pres., will install 6-stand cotton gin; has building; ordered equipment. (See Cottonseed-Oil Mills.)

Ga., Lagrange.—Elm City Gin will build gin and seedhouses; let contract Pike Bros. Lumber Co.

Miss., Charleston.—Tallahatchie Co-operative Warehouse Co. will erect 6-stand-system gin.

N. C., Long Island.—Long Island Cotton Mills will enlarge capacity of cotton gin. (See Textile Mills.)

N. C., Pomaria, P. O. at Newbern.—A. H. Shealy will rebuild ginhouse and equip with new machinery.

Tex., Abilene.—Western Compress & Storage Co., capital \$175,000, inceptd. with Geo. Finburg, Pres. and Gen. Mgr.; succeeds Western Texas Compress Co. of Corsicana, which had \$50,000 capital; will consolidate compresses at Abilene, Hamlik, Sweetwater and Snyder.

Tex., Stamford.—Farmers' Gin Co. is being organized to build cotton gin; plans 5-stand plant costing about \$10,000.

Tex., Weston.—Farmers' Gin Co., capital \$10,000, inceptd. by J. S. Collins, J. W. Weaver and T. E. Wester.

COTTONSEED-OIL MILLS

Ala., Hartsells.—Hartsells Oil & Fertilizer Co., C. O. Jagers, Pres., will establish cottonseed-oil mill and gin; has concrete building 80x240 ft.; install 2-press hydraulic oil mill, 6 linters and 6-stand cotton gin; daily capacity 40 tons; machinery purchased; estimated cost complete \$35,000. (Lately reported inceptd. with \$35,000 capital stock.)

Ga., Athens.—Southern Cotton Oil Co. has arranged for rebuilding burned plant; erect steel and brick building costing about \$50,000 for oil mill, warehouse, seedrooms and fertilizer and mixing plant. (Lately noted.)

Tex., San Antonio.—Russell-Coleman Cotton Oil Co. succeeds partnership enterprise; has mill with capacity 14,000 tons per season; R. R. Russell, Pres.; T. A. Coleman, V.-P. and Gen. Mgr. (Lately noted inceptd. with \$200,000 capital.)

DRAINAGE SYSTEMS

La., Bogalusa.—S. G. Patterson will construct drainage and irrigation system to reclaim and develop 120 acres land; will drill artesian well for stock and irrigation, install hydraulic ram, build tank and erect barn; will engage in stock raising; plans being prepared by J. C. Valadie, Engr., New Orleans.

N. C., Kinston.—Carolina Land & Development Co. let contract Southern Drainage & Construction Co. of Kinston to construct about 50 mi. drainage canals and develop about 20,000 acres swamp and overflowed land in Eastern North Carolina.

N. C., Lillington.—Stewarts Creek Drainage Dist., Harnett county, let contract Southern Drainage & Construction Co. of Kinston, N. C., to drain canals, bridges, etc.; develop for agriculture; construction begun.

Tenn., Lexington.—Henderson county, Buck River Drainage Dist., will construct canal; W. F. Appleby, R. E. Owen and W. W. Reed, Commrs., receive bids June 30. (See Machinery Wanted—Canal Construction.)

Tenn., Selmer.—Big Owl Drainage Dist. (G. A. Prather, E. W. Wyatt and N. D. Erwin, Directors) let contract Tupelo Dredging Co., Tupelo, Miss., to excavate 185,000 cu. yds.; canal 5.76 mi. long; average top width 21 ft.; bottom width 12 ft.; depth 8 ft.; drain 2100 acres.

Tex., Victoria.—Victoria County Drainage Dist. No. 3 voted \$190,500 bonds to construct drainage system; district comprises 73,500 acres in northeastern section of county. Address County Commrs. (Lately noted.)

ELECTRIC PLANTS

Ark., Lonoke.—W. Y. Bransford, owner of Lonoke light and water plant, contemplates purchasing and installing 50-kw. single-phase 60-cycle generating unit, directly connected.

Fla., Buena Vista.—J. T. Gratigny, Agt. for Chas. Deering of Wm. Deering estate, states will not begin erection of buildings for lately-noted power plant and service station until next winter; no details now available.

Fla., Lakeland.—C. J. Brassel proposes establishment of electric-light plant; wants to correspond with parties prepared to install plant for town of 900 population. (See Machinery Wanted—Electric-light Plant.)

Fla., South Jacksonville.—Board of Bond Trustees let contract Ames Iron Works of Atlanta, Ga., for 240 H. P. Una-Flow engine, and Allis-Chalmers Mfg. Co. of Atlanta, Ga., for 175 K. V. A. alternator, with exciter and switchboard; these contracts in connection with improvements to electric-light system noted in April; J. B. McCrary Co., Engr. and Contr., Atlanta, Ga.

Ga., Tennesse.—City engaged Crook & Lanneau, Engrs., Macon, Ga., to prepare plans for light, water and sewer plant construction; now making surveys.

Ky., Lexington.—Kentucky Utilities Co. contemplates erecting 2 outdoor substations, one of 200 kw. and other of 300 kw.; equipment and material purchased.

Md., Stockton.—Stockton Electric Light Co., capital \$5000, incptd.; Alfred C. Hancock, Pres.

Miss., Clarksdale.—City voted \$150,000 bonds to enlarge electric-light plant, etc. Address City Commrs. (See Water-works.)

Miss., Kosciusko.—City voted \$30,000 bonds for municipal ownership of electric plant and water-works; proposes to erect combined electric-light and water plant to furnish city and commercial service; C. O. Townsend, City Clerk.

Mo., Bosworth.—Henric, Kent & Lowry, Consit. Engrs., Reserve Bank Bldg., Kansas City, have been engaged to supervise engineering work for proposed electric-light plant.

Mo., Charleston.—Missouri Public Utilities Co. of Cape Girardeau, Mo., contemplates constructing electric transmission system from Charleston to East Prairie, 11 mi.; also plans to erect two step-up and two step-down transformer stations, equipped with two 20-kw. 13,200-220-110-volt and two 2300-13,200-volt transformers; is extending 12,300-volt transmission line from Chaffee to Oran and Morley, 10 mi.; this power to be supplied from plant at Cape Girardeau; P. Ziegenfuss, Purchasing Agent, 750 Railway Exchange Bldg., St. Louis; J. W. Sullivan is in charge of work.

Mo., Kirksville.—City rescinded action calling for election to vote on \$70,000 bonds to build and equip electric-light plant and to complete rebuilding water-works. Address The Mayor. (Lately noted.)

Mo., Lowry City.—Henry S. Grimes applied for franchise to construct electric-light plant.

Mo., Ralls County.—Hannibal Rwy. & Electric Co. applied to Ralls County Commrs., New London, Mo., for authority to construct transmission line through Ralls county to Marion county line to secure power from transmission system of Keokuk Electric Co. of Keokuk, Iowa.

Mo., Springfield.—John T. Woodruff is reported interested in construction of central lighting and heating plant for business section; plans and estimates being prepared.

Mo., Springfield.—Board of Regents of Fourth Dist. Normal School, John J. Schneider, Pres., will build electric plant on campus to light buildings.

Mo., Tarkio.—Tarkio Electric & Water Co. contemplates constructing 6 or 8 mi. transmission lines and installing small plant.

N. C., Wake Forest.—City plans installation of new additional machinery in electric light plant; contemplates \$5000 expenditure, obtaining this from \$10,000 bond issue. (City lately noted to vote July 27 on \$10,000 bonds to enlarge electric light plant.)

Okla., Boswell.—City voted \$14,000 bonds to build electric-light plant; will invite bids in about 60 days on electrical equipment; Jas. T. George, Engr., Ada, Okla. (See Machinery Wanted—Electrical Equipment.)

Okla., Jones.—Board of Trustees engaged Benham Engineering Co., Colcord Bldg., Oklahoma City, Okla., to make electric-light plans; will vote on bonds. (See Water-works.)

Okla., Laverne.—W. H. Lewis & Son are reported as contemplating installation of electric-light plant.

S. C., Columbia.—Alta Holding Co. incorporated; W. M. Burney, Pres.-Treas.; W. G. Belser, Secy.

S. C., Summerville.—F. W. Wagener & Co. of Charleston, S. C., owners of Pine Forest Inn, will rebuild power plant lately noted burned; let following contracts: Valk & Murdock of Charleston, S. C., two 150 H. P. tubular boilers, piping, settings, etc.; Ames Iron Works of Atlanta, Ga., two Una-Flow engines; Westinghouse Electric & Mfg. Co. of Charlotte, N. C., for two generators and switchboard; all other contracts let.

Tenn., Henderson.—City, J. I. Galbraith, Mayor, will not issue lately-noted bonds for electric plant. (See Water-works.)

Tenn., Shelbyville.—People's Power Co., capital \$25,000, incptd. by J. E. Huffman, E. C. Huffman, A. E. McGill and others.

Tex., Dallas.—Dallas Union Terminal Co. will build electric plant to provide heat, light and power for new Union Depot; estimated cost \$60,000.

Tex., Olney.—Olney Light & Power Co. will construct electric-light system.

Tex., Rule.—Board of Local Improvement is considering installation of electric-light plant to cost about \$10,000.

Va., Norton.—Norton Coal Co. will not rebuild power plant burned at estimated loss of \$25,000; securing electric power from central station of New York Mining & Mfg. Co. (Lately incorrectly reported to rebuild.)

FLOUR, FEED AND MEAL MILLS

Ark., Hampton.—W. B. Hollingsworth proposes construction of flour mill; building to be of mill construction, 3 stories, costing about \$1200; machinery, for daily output 25 bbls. flour, to cost \$3000. (See Machinery Wanted—Flour Machinery.)

Fla., Miami.—Southern Feed Co., capital stock \$5000, incptd.; J. D. McKenney, Pres.; Phelps Hopkins, V.-P.; W. C. Eberwine, Secy.-Treas.

Ky., Louisville.—Louisville Milling Co. will erect brick boiler-house at 2432 S. Floyd St.

N. C., Pomaria.—P. O. at Newbern.—W. S. Seybt plans to build grist mill operated by gasoline.

N. C., Sanford.—Seaboard Milling Co., capital stock \$25,000, incptd. by J. B. Robeson, E. M. Underwood and S. P. Hatch.

N. C., Valdese.—Valdese Roller Mills, capital \$50,000, incptd. by John Refour, John Henry Pascal and others.

N. C., Wadesboro.—Blalock-Allen Hardware Co. plans to build flour mill. (See Machinery Wanted—Flour Mill.)

N. C., Wilson.—Farmers' Cotton Oil Co., J. R. Chamberlain, Raleigh, N. C., Pres., is having plans prepared for addition in which to install feed mill; 50x30 ft.; 2 stories and basement; brick; mill construction; will install complete equipment, 100 tons daily capacity, to manufacture horse and cattle feed, utilizing products of oil mill department of the company's cottonseed-oil mill and ferti-

lizer plant; production of hog and chicken feed also contemplated.

S. C., Chester.—D. H. Shannon is interested in establishment of roller mill.

Tex., Edinburg.—Edinburg Grain & Milling Co., capital stock \$7000, incptd. by R. B. Curry, E. Beamer and A. Ledbetter.

Tex., Fort Worth.—Barrus Mill & Elevator Co. will erect 3 additional stories, each 100x200 ft., to 1-story mill building at north end Jennings Ave. viaduct; provide 60,000 sq. ft. additional floor space; ordered two 800 bbl. mills from Allis-Chalmers Mfg. Co., Milwaukee, Wis.

FOUNDRY AND MACHINE PLANTS

Ark., Little Rock.—Machinery.—E. C. Wehrfritz Machinery & Supply Co. will rebuild machine shop and warehouse reported burned at loss of \$100,000.

Ga., Rome.—Plows.—Kay Disc Plow Co., capital \$6000, incptd. by Augusta P. McKay, W. H. Martin, J. B. Sullivan and H. A. Dean.

Mo., St. Louis.—Predigesters.—Landro Mfg. Co., capital \$20,000, incptd. by Edgar Roberts, H. B. Barton, Wm. M. Price and others to mfr. machines to predigest and sterilize stock food.

N. C., Rutherfordton.—Ditching and Terracing Machines.—Willman Mfg. Co., capital \$25,000, incptd. by G. S. Harrill of Rutherfordton, J. B. Bridges of Shelby, S. B. Tanner of Charlotte and others.

N. C., Charlotte.—Machinery and Construction.—Fraser-Purser Co. (lately incorrectly noted as Travers-Purser Co.) will deal in power machinery; contract to erect complete power and pumping plants, etc.; J. W. Fraser, Pres.-Treas.; J. R. Purser, V.-P.; capital \$50,000.

Tenn., Bristol.—Stoves.—Iron City Stove & Foundry Co. reorganized with J. Gutman, Pres.; J. C. George, V.-P., and J. B. Baumgardner, Secy.-Treas.; acquired plant of Iron City Stove & Foundry Co.; will remodel and operate. (Mr. Gutman lately noted to have purchased and to enlarge plant of Iron City Stove & Foundry Co.)

Tex., Dallas.—Plows.—Southern Rock Island Plow Co., capital stock \$2500, incptd. by W. I. Bogardus, N. A. McLemore and W. H. Marshall.

Tex., El Paso.—Blacksmith Shop.—Stanley Bevan will build brick blacksmith shop to cost \$4000.

Tex., Dallas.—Farm Implements.—Improved Farm Implement Co., capital stock \$100,000, incptd. by H. M. Gardner, F. A. McNally and R. B. Sample.

GAS AND OIL ENTERPRISES

Louisiana.—Arkansas-Louisiana Oil Co. organized with Dr. A. L. Sneed, Pres.; Jack Frisby, V.-P.; Wm. Borman, Secy.-Treas.; leased 775 acres oil land and plans development.

La., Shreveport.—Bossier Gas Co., capital stock \$5000, incptd.; S. W. Tullos, Pres., Shreveport; John D. Hughes, V.-P., Georgetown, Tex.; W. W. Newcomb, Secy.-Treas., Shreveport.

La., Shreveport.—Louisiana Colonization, Construction, Oil & Gas Co., capital \$200,000, incptd.; J. H. Tucker, Pres.; Joe Di Carlo, V.-P.; Alfred Tinaglia, Secy.; Domenico Zagone, Treas.

La., Shreveport.—State Oil Co., capitalization \$2,000,000, incptd. by E. K. Smith (Pres. Commercial National Bank of Shreveport) and associates; plans to acquire and develop various gas and oil properties; deeds placed in escrow, preliminary to arranging for organization; no further details ready for publication. (Mr. Smith, F. B. Keech & Co. of New York and others recently reported planning organization \$2,000,000 corporation, etc.)

Md., Baltimore.—Gas.—Consolidated Gas, Electric Light & Power Co., Lexington and Liberty Sts., let contract to Morrow Bros., Fidelity Bldg., Baltimore, for erection of valvehouse; 90x35 ft.; fireproof; brick and steel; slate roof; concrete floor; cost about \$30,000; plans by Geo. Baedekopf, company's engineer. (Lately noted.)

Mo., St. Joseph.—Oil Refinery.—St. Joseph Refining Co., general office, Cushing, Okla., incptd.; capital stock, \$25,000; W. J. Rowland, Pres.; W. H. Tippet, Secy.-Treas.; will operate recently-completed plant for refining crude petroleum; daily capacity, 350 bbls.; crude supply to be shipped in tank cars from Cushing (Okla.) field to St. Joseph; present products to include all grades of kerosene and gasoline, also fuel oil and road oil. (See Okla., Cushing.)

Okla., Cushing.—Oil Refinery.—St. Joseph Refining Co. (lately noted incptd., capital stock \$25,000) will operate petroleum refining plant at St. Joseph, Mo. (See Mo., St. Joseph.)

Okla., Dewey.—Don Oil Co., capital \$10,000, incptd. by W. S. Rayduro, W. A. Letson, H. M. Brent and others.

Okla., Oklahoma City.—Dan Patch Oil & Gas Co., capital stock \$25,000, incptd. by Ida F. Hasley, S. A. Sloan and Geo. A. Matlack.

Okla., Shawnee.—Denver Oil & Gas Co., capital stock \$25,000, incptd. by E. E. Hood and C. E. Dierker of Shawnee; H. P. Decker, Independence, Kans., and tobers.

Tenn., Cleveland.—Gas Plant.—Cleveland Gas Co. will be incptd. by S. E. DeFreese (Mgr. Chattanooga Gas Co., Chattanooga) and others; will install gas plant; lay 5 to 6 mi. mains; estimated cost \$65,000. (Lately noted.)

Tex., Austin.—People's Oil Co., capital stock \$6000, incptd. by R. G. Mueller, H. B. Barnhart and A. E. Hancock.

Tex., Austin.—Taylor-Elgin Oil Co., capital stock \$10,000, incptd. by I. N. Bettison, A. T. Knies and Ernest Nalle.

Tex., Austin.—Alle-Beaukiss Oil Co., capital stock \$50,000, incptd. by H. P. Allen, J. E. Wren and Chas. Haas.

Tex., Beaumont.—Dennis Oil Co., capital stock \$4000, incptd. by J. F. Winn, T. H. Dennis and Ed F. Lohmann.

Tex., Brownwood.—Gas Plant.—Central Texas Gas Co. organized with H. C. Weible, Pres., Coffeyville, Kans.; Chas. F. Hart, V.-P. and Gen. Mgr., Bangs, Tex.; Brooks Smith, Secy.-Treas., Brownwood; acquires Noedsha Oil & Gas Co. and Bangs Fuel & Light Co.; proposes to complete development work in Bangs field and supply gas to various cities in that vicinity. (Lately noted incptd. with \$150,000 capital stock.)

Tex., Chriesman.—Chriesman Independent Oil Co., capital \$12,000, incptd. by C. Matejowsky, Kas Philip, Sr., and W. D. Boyd.

Tex., Corpus Christi.—Texas Gas & Petroleum Co. (lately noted incptd., capital stock \$100,000), Henry M. Wallace, Pres., contemplates drilling 3 to 5 wells, 3000 ft. or deeper, to develop gas and oil, in vicinity Corpus Christi and Temple, Tex.; organizers of the company own gas plants at Corpus Christi, Temple and Waxahachie, and are planning to distribute natural gas to the cities.

Tex., Dallas.—Mitchell Oil Co., capital stock \$30,000, incptd. by D. J. Mitchell, Edwin Singleton and Bennett Hill.

Tex., Galveston.—Gas Plant.—Texas Light & Power Co. (main office, Dallas, Tex.) purchased Galveston Gas Co.'s plant and plans expenditure of \$100,000 to \$150,000 in improvements, to include extension of mains and installation of additional machinery.

Tex., Georgetown.—Georgetown-Thrall Oil Co., capital stock \$5000, incptd. by J. T. McCarty, R. T. Cooper and T. H. Anderson.

Tex., Houston.—Schulz Oil Co., capital stock \$50,000, incptd. by G. C. Wood, R. L. Blaffer and W. S. Farish.

Tex., Lockhart.—Lockhart Oil & Development Co., capital \$100,000, incptd. by L. Schwarz, Albert Feinbaum, R. T. Trigg and others.

Va., Norfolk.—Anti-Carboline Oil Co., capital \$150,000, incptd.; Ralph Benton, Pres.; Jos. G. Lancaster, Secy.-Treas.

ICE AND COLD-STORAGE PLANTS

Ga., Blakely.—City votes July 10 on \$10,000 bonds to establish ice plant. Address The Mayor. (Lately noted as having voted to establish plant.)

Ga., Boston.—City contemplates building ice plant. Address The Mayor.

La., St. Martinville.—Ed Bulliard will install 10-ton ice plant. (See Machinery Wanted—Ice Plant.)

S. C., Spantenburg.—E. C. Wrightson will install cold-storage plant in market at 149 E. Main St.

Tex., El Paso.—Chas. T. Nagle, 705 Lee St., will build 30-ton ice plant; purchased equipment from Henry Vogt Machine Co. of Louisville, Ky.

Tex., Moody.—Gormany Bros. will rebuild ice plant and water-works lately noted burned at estimated loss of \$15,000. (See Water-Works.)

IRON AND STEEL PLANTS

Ala., Ensley.—Iron Furnace.—Tennessee Coal, Iron & R. R. Co., Birmingham, will blow in No. 5 iron furnace.

Va., Richmond.—Electrical Steel Plant.—Thos. S. Wheelwright, V.-P. Old Dominion Iron & Nail Works, is understood to be plan-

ning construction of electrical steel works on Belle Isle, where his company recently completed 5000 H. P. hydro-electric plant in connection with its works; has made no definite decision; will announce plans when decided upon.

IRRIGATION SYSTEMS

La., Bogalusa.—S. G. Patterson will install irrigation system; drill artesian well for irrigation and stock. (See Drainage Systems.)

LAND DEVELOPMENTS

Ala., Mobile.—Helen Lumber Co., capital \$50,000, incptd. to operate sawmill.

Fla., Tillman.—Tillman Improvement Co., capital stock \$50,000, incptd.; W. C. Tubbs, Pres.; H. A. Powell, V.-P.; W. L. Carter, Secy.

Ga., Boston.—City contemplates building park. Address The Mayor.

Ga., Brinson.—Southern Co-operative Land & Marketing Co., authorized capital \$1,000,000, incptd.; operating office at Brinson and general office at 1301 Lumber Exchange Bldg., Chicago; proposes development of land for farming, townsites, etc.; C. S. Earl, Pres.; C. Percival, V.-P.; G. A. Meade, Secy.; A. Jernberg, Sr., Gen. Mgr.; all of Chicago.

Ga., Tifton.—Improvement Co., capital stock \$50,000, incptd. by L. P. Thurman, A. C. Tift, R. E. Hall and others.

La., Bogalusa.—Bogue Chitto Stock Farm incptd. by W. H. Sullivan (Mgr. Great Southern Lumber Co.) and others; will develop stock farm; now fencing 260 acres.

N. C., Charlotte.—Oakland Cemetery Association, capital \$250,000, incptd. by J. J. Misenheimer, C. A. Misenheimer and W. C. Dowd.

LUMBER MANUFACTURING

Ky., Louisville.—Norman Lumber Co. contemplates purchasing and installing molding machines.

Miss., Hwannee.—Brown Lumber Co. will rebuild planing mill reported burned at estimated loss of \$50,000.

Miss., Scott.—G. M. Flynn of Columbus, Miss., and D. K. Jeffries of Chicago purchased timber land and will build mill.

W. Va., Boyer.—North Fork Lumber Co., capital stock \$300,000, incptd. by John W. McCullough of Boyer, A. D. Neil and Oscar Latt of Elkins, W. Va., and others.

METAL-WORKING PLANTS

Fla., Tampa.—Aluminum Kitchen Utensil.—O. E. Otto Mfg. Co. (O. E. Otto and others) will build plant on Hillsborough River, near Sulphur Springs, to manufacture aluminum kitchen utensil.

Md., Baltimore.—Enameled Ware.—Baltimore Enamel & Novelty Co. is having plans prepared by G. E. Painter Co., 324 N. Charles St., Baltimore, for addition to plans on Woodall St.; reported to be 128x300 ft.; brick or reinforced concrete.

MINING

Ala., Ashland.—Graphite.—Clay County Graphite Co., capital stock \$30,000, organized by G. A. Mattison of Ashland, A. B. Conklin of Atlanta, Ga., and others to mine graphite.

Ala., Montgomery.—Ochre.—Alva Fitzpatrick, 51 S. Goldthwaite St., plans to mine hard and soft, red and yellow ochre; will install machinery. (See Machinery Wanted—Mining Machinery.)

Ark., Batesville.—Smelter.—J. G. Thomson of Woodward, Ala., and others contemplate building smelter; will announce details as soon as erection is definitely decided. (Lately reported to build plant.)

Mo., Joplin.—Lead and Zinc.—Carl Duffelmeyer secured 15-acre mining lease and plans development.

Mo., Joplin.—Lead and Zinc.—Victoria Zinc & Lead Mining Co., capital stock \$5000, incorporated.

Mo., Joplin.—Lead and Zinc.—S. Y. Ramage of Oil City, Pa., purchased 40 acres west of Joplin and is reported to build concentrating plant.

Mo., Webb City.—Lead and Zinc.—Fisher Mining & Milling Co., capital \$2000, incptd. by C. A. Fisher, Edward James and F. C. Wallover.

Mo., Webb City.—Lead and Zinc.—J. B. Kassebaum of Pittsburgh, Kan., and others leased 40 acres mining land near Webb City; will build 500-ton mill to cost \$40,000.

Oklahoma.—Lead and Zinc.—Interstate Land & Mining Co., capital \$75,000, organized; to mine lead and zinc in Oklahoma

and Missouri; H. Clay McKee, Pres.; Chas. Shewey, V. P. and Mgr.; W. R. McKee, Treas.; all of Mt. Sterling, Ky.

Okla., Miami.—Red Cloud Mining Co., capital stock \$60,000, incptd. by A. K. Wilder, G. W. Rice and J. R. Thornburg.

MISCELLANEOUS CONSTRUCTION

Fla., Jacksonville.—Pier Sheds.—Port Com. will erect 2 pier sheds of fireproof construction, 73x500 ft.; corrugated iron purchased; Chesapeake Iron Works, Severn and Bayard Sts., Baltimore, Md., is general contractor; begin construction in about 10 weeks; plans by F. W. Bruce, Ch. Engr. Port Com. (Chesapeake Iron Works lately noted as contractor at \$57,893 for erection and to furnish structural iron and sheet metal, and O. P. Woodcock of Jacksonville as contractor at \$5118 for foundation.)

Fla., Miami.—Dredging.—City votes about Aug. 19 on \$550,000 bonds as follows: \$350,000 to construct Biscayne Bay channel between municipal docks and Government cut; \$150,000 for 2 bridges over Miami River to cost \$75,000 each, and \$50,000 to construct sewers. B. H. Klyce, City Engr.

Fla., Orlando.—Dredging.—L. N. Lewis of Orlando has contract to dredge canal to connect Lakes Gatlin and Conway; canal 12 ft. wide, 4 ft. deep and 1200 ft. long.

Ga., Boston.—Natatorium.—City contemplates building natatorium. Address The Mayor.

La., Monroe.—Heating System.—Government let contract Nolan-Clifford Co. of Newport News, Va., at \$4720 to install hot-water heating system in United States postoffice and courthouse.

Miss., Vicksburg.—Levee.—Third Mississippi River Dist., P. O. Box 404, will construct 1,415,000 cu. yds. levee work; bids until July 12. (See Machinery Wanted—Levee Construction.)

Miss., Vicksburg.—Levee.—Comms. Third Mississippi River Dist., Box 404, let contract N. C. Williamson & Co. to construct about 519,000 cu. yds. levee enlargement in Bunch Bend, North Louisiana; J. R. Slatery, Major, Engrs. (Call for bids lately noted.)

Mo., Independence.—Subway.—Allen C. Southern, Jackson County Surveyor and Highway Engr., invites bids until July 7 to construct Missouri Pacific Ry. subway and Chicago & Alton R. R. overhead crossing on E 15th St.; estimated cost \$85,000, of which county will pay \$50,000 and railroads \$35,000.

Tex., Fort Worth.—Levee.—City will construct levee to protect Holly pumping station, filter plant and other nearby municipal property; estimated cost \$18,500; day labor; F. J. Von Zuben, City Engr.

Tex., Port O'Connor.—Dike.—Government let contract Metropolitan Contracting Co., Texas City, Tex., at about \$22,000 to construct 3600 lin. ft. round and sheet pile (creosoted) dike; riprap.

Va., Staunton.—Lake.—Staunton Country Club will construct lake for swimming, etc., by building dam across creek; plans call for dam of concrete and earth 18 ft. wide at base and tapering to 8 ft. at top; spillway of reinforced concrete; lake to be 350x250 ft., varying in depth from few inches to 10 ft.

MISCELLANEOUS ENTERPRISES

Fla., Leesburg.—Printing.—R. F. E. Cooke and L. M. Johnson will erect building to be equipped by Commercial Publishing Co. as printing plant; structure will be 100x35 ft.; office, 15x28 ft.; pressroom, 20x35 ft., with cement floor and press pits; let contract Dyer & Davis at \$3500; W. H. Carr, Archt.

Ga., Americus.—Incinerator.—City has decided nothing definite regarding garbage-disposal plant; Board of Health suggests construction of incinerator; J. B. Ansley, City Engr. (Lately noted.)

Ky., Louisville.—Oil Tank Line.—Kentucky Tank Line Co., capital stock \$3000, incptd. by Jos. J. and Thos. P. Caffrey, Penelope J. Caffrey and others; proposes to lease tank cars for transportation of oil, etc.

Ky., Louisville.—Engineering.—West Engineering Co., 233 S. 5th St., organized with L. P. Lewis, Pres.; A. F. Elder, V.-P.; W. M. West, Secy.-Treas.; will undertake boiler-room economy construction work and consulting power-plant engineering; also deal in various special and standard power-plant equipment. (Lately noted incptd. with \$5000 capital stock.)

Miss., Bay St. Louis.—Ferry.—Bi-County Ferry Co., capital stock \$1800, incptd. by M. A. Rush, L. M. Power, L. E. Capdepon and others.

Miss., Shannon.—Grain Elevator.—W. B. Redus & Sons will build grain elevator; ca-

pacity to shell 2500 to 3000 bus. corn per day and storage capacity of 7000 bus.

Mo., Kansas City.—Water.—Electric Pure Water Co., capital \$5000, incptd. by John G. Schmerdrinoff H. Clark and I. E. Sexton.

Mo., St. Louis.—Elevator.—St. Joseph Public Elevator Co., capital \$50,000, incptd. by R. E. Hastings, J. S. Frederick and Orestes Mitchell.

Okla., Ada.—Publishing.—Star Publishing Co. (lately noted incptd., capital stock \$5000) organized; A. D. Tanner, Pres.; L. R. Clark, V.-P.; F. F. Brydla, Secy., Treas. and Mgr.; leased building and will install machinery, cost \$500, for newspaper and job printing.

S. C., Charleston.—Dry Cleaning.—Howard French Dry Cleaning Co., capital \$2000, incorporated by W. S. Gadsden, Abe G. Holst and Paul M. Macmillan.

Tenn., Harriman.—Construction.—Harriman Construction Co., capital stock \$5000, incptd. by M. W. Walker, Brown Crinkley, J. C. Foreman and others.

Tex., Childress.—Laundry.—Childress Steam Laundry, capital stock \$7500, incptd. by F. B. Bryan, A. G. Hargrave and C. J. Hargrave.

Va., Salem.—Publishing.—Intercounty Publishing Co., capital \$15,000, incptd.; C. E. Shelor, Pres.; E. B. Shelor, V.-P.; C. V. Younce, Secy.-Treas.

W. Va., Charleston.—Contracting.—Rippeteo Contracting Co., capital stock \$10,000, incptd. by W. L. Rippeteo, Grover C. Rippeteo, Fred Rippeteo and others.

MISCELLANEOUS FACTORIES

Ala., Birmingham.—Bottling.—Atlas Bottling Co., capital stock \$3000, incptd.; Rinaldo Williams, Pres.-Treas.; J. de B. Hooper, V.-P.; John W. Williams, Secy.

Ala., Birmingham.—Candy.—Collins Candy Co., capital \$18,000, incptd.; Nicholas Collas, Pres. and Gen. Mgr.; John Harduoth, V.-P.; Nicholas Collas, Treas.; Theo. Harduvels, Secy.

Ala., Birmingham.—Bottling.—Atlas Bottling Co., capital stock \$3000, incptd.; Rinaldo Williams, Pres.; J. de B. Hooper, V.-P.; John Williams, Secy.

Ark., Mansfield.—Creamery.—Mansfield Canning Co., J. H. Caldwell, Pres., plans later to install creamery in connection with cannery. (See Canning and Packing Plants.)

D. C., Washington.—Blackboards.—United States Blackboard Co., capital \$30,000, incorporated; Herman E. Burgess (of Burgess & Parsons, 700 10th St. N. W.), Pres.; Chester L. Cake, Secy.

D. C., Washington.—Bag Cleaner.—Invincible Bag Cleaner Mfg. Co., 1812 N. Capitol St. (lately noted incptd., capitalization \$5000), organized; Wm. Scott, Pres.; D. L. Jenkins, V.-P.; Clarence O. Wood, Secy.-Treas.; manufacture machine for cleaning cement, lime and plaster sacks; at present place contracts for manufacture of machines. (See Machinery Wanted—Engines (Gas) and Electrical Machinery.)

Fla., Bartow.—Slicer, etc.—Lightning Safety Fruit & Vegetable Machine Co. organized with J. J. Boynton, Pres.; J. R. Spencer, V.-P.; J. L. Ross, Secy.; R. B. Huffaker, Treas.; manufacture fruit and vegetable slicing, shredding, stripping and grating machine; proposes to have machine manufactured by contract; if arrangements cannot be made will consider erection of factory. (Lately noted.)

Fla., Hastings.—Bottling.—Semi-No-La Bottling Co., capital stock \$5000, incptd.; R. B. Bassa, Pres.; Geo. E. Taylor, V.-P.; S. W. Johnson, Treas.; A. L. Simmons, Secy. and Gen. Mgr.

Fla., Sanford.—Soap.—United States Granulated Soap Co. incptd. to manufacture granulated soap.

Ga., Tifton.—Refrigerators.—I. D. Morgan will establish plant to manufacture refrigerators for curing meat.

Ky., Ashland.—Bottling.—Ashland Sher-A-Coca Bottling Co., 24th and Central Sts., organized with G. W. Moore, Pres.; Al Saunders, V.-P.; D. D. Jordan, Secy.; Wm. Meade, Treas.; E. J. Martt, Mgr.; has fireproof building 25x75 ft.; will install bottling machinery costing about \$500. (Lately noted incptd. with \$10,000 capital.)

Ky., Lexington.—Creamery.—Centralia Creamery Co. of Centrailla, Ill., leased Parker Bldg. being erected at Short and Spring Sts. and will equip as creamery.

Ky., Louisville.—F. Wolkow & Son will erect brick factory building at 128 W. Market St.; cost \$3000.

Ky., Louisville.—Danner Utilities Mfg. Co.,

capital stock \$7500, incptd. by Andy and Chas. Danner and Albert Raasner.

Ky., Louisville.—Remedy.—International Remedy Co. increased capital stock from \$7000 to \$50,000.

Ky., Louisville.—Stogies.—Falls City Stogie Co., capital \$4000, incptd. by Fred Rath, Alfred Breehl and Rudolph C. Loeser.

Ky., Louisville.—Lee Cook Mfg. Co., capital stock \$50,000, incptd. by C. Lee Cook, Wm. J. P. Schoeffler and Wm. Furlong.

Ky., Flemingsburg.—Bottling.—Fleming Bottling Works, C. W. Henderson, Mgr., will install plant.

Md., Curtis Bay.—Distillery.—Chas. Webb of A. L. Webb & Co., branch of Americana Distributing Co., Lombard and Hollingworth Sts., Baltimore, is interested in plan to build distillery; not prepared to state any further facts.

Md., Elkton.—Railway Signals.—Eastern Railway Signal Co., capital \$100,000, incptd. by Clement M. Egner and associates.

Miss., Biloxi.—Creamery.—J. C. Tyler is interested in plan to establish creamery.

Mo., Kansas City.—Tires and Rubber.—Kansas City Tire & Rubber Co., capital \$2,000,000, incptd. by P. E. Werner of Akron, O., and others; will operate plants in Kansas City and Chester, W. Va.

Mo., Newburg.—Mail Device.—Newburg Automatic Mail Co., capital \$100,000, incptd. by John A. Chambers, J. A. Porter and A. H. Dowell.

Mo., Nevada.—Creamery.—Vernon Packing & Creamery Co. incptd. by F. N. Davis and others. (See Canning and Packing Plants.)

Mo., St. Louis.—Garments.—Starr-Frankel Garment Co., capital stock \$10,000, incptd. by Harry Starr and Hannah A. Frankel.

Mo., St. Louis.—Oilcloth.—National Oilcloth Co., Jennings (P. O. at St. Louis), contemplates building factory; 1 story; 163x247 ft.; Kilpstein & Rathmann, Archts., Chemical Bldg.

Tenn., Bristol.—Candy.—Company organized with \$60,000 capital and G. F. Helms, Pres.; W. P. Reeves, V.-P.; H. H. Andrews, Secy.-Treas.; succeeds Gibson-Helms Co.

Tenn., Chattanooga.—Beverages.—Union Beverage Co., capital \$400,000, incptd. by A. C. Cochrane, E. B. Cochrane, E. R. Cochrane and others.

Tenn., Kingsport.—Tanning Extracts.—Kingsport Extract Corp. plans to establish factory for tanning extracts; Winthrop H. Kellogg, New York, is V.-P.; R. Y. Grant, Kingsport, can give particulars. (Lately noted incptd. with \$450,000 capital stock.)

Tenn., Knoxville.—Candy.—Littlefield & Steere Co. will build candy factory; 4 stories and 2 basements; 137x50 ft.; mill construction; R. F. Graf & Sons, Archts., Knoxville; install machinery for daily capacity 20,000 lbs. candy; has equipment. (Lately incompletely noted.)

Tex., Dallas.—Varnish.—Lacquer-All Co., capital \$50,000, organized by J. Edgar Finley, H. O. Samuel, K. R. Craig and others; T. C. Duke of Kansas City, Mo., to be Gen. Mgr.; install machinery in building at Wall and S. Lamar Sts.

Tex., Denison.—Automobile Lights.—Company organized with Dr. A. W. Acheson, Pres.; G. W. Pittman, V.-P.; E. H. Hanna, Secy.-Treas., to manufacture curve-light apparatus for automobiles patented by Will D. Old.

Tex., Houston.—Creamery.—Houston Creamery Co. increased capital stock from \$40,000 to \$60,000.

Tex., San Antonio.—Nichols, Whaley & Scott Mfg. Distributing Co., capital stock \$100,000, incptd. by G. T. Nichols, R. M. Whaley and S. M. Scott.

Va., Richmond.—Shrapnel.—American Locomotive Co., 30 Church St., New York, has permit to erect two 1-story frame sheds costing \$3500; will equip to manufacture shrapnel. (Lately noted as having ordered machinery to manufacture shrapnel and cartridge casings, etc.)

Va., South Boston.—Tobacco.—Willingham Tobacco Co., capital \$50,000, incptd.; E. W. Willingham, Pres., South Boston; E. A. Willingham, V.-P., Danville; M. E. Willingham, Secy.-Treas., South Boston.

W. Va., Chester.—Tires and Rubber.—Kansas City Tire & Rubber Co., capital \$2,000,000, incorporated by P. E. Werner of Akron, O., and others; will operate plants in Chester and Kansas City, Mo.

W. Va., Clarksburg.—Explosives.—Wallace Torpedo Co., capital \$10,000, incptd. by E. H. Bell, Dan Hostulter, Willard Oimstead and others.

MOTORS AND GARAGES

D. C., Washington.—Garage.—Mrs. Honora Rundlett let contract to M. A. Weller, \$16 14th St. N. W., Washington, to erect garage at 1623 L St. N. W.; 1 story; 27.4x127 ft. and fireproof; adjoining building, extending third story; brick and concrete; flag roof; steam heat; electric light; cost \$18,000; plans by P. P. Rundlett.

Ky., Louisville.—Automobile Line.—Louisville Jitney Bus Co., capital stock \$25,000, incptd. by Felix P. Buchart, Robt. J. Kinkead and Bert H. Taggart.

Mo., Kansas City.—Garage.—Harmon Moore, 39th and Summit Sts., let contract Edelman & Fleming, 122 Midland Bldg., to erect garage; 2 stories; 50x130 ft.; estimated cost \$12,000; H. F. Brandenberger, Archt., 15 W. 9th St.

Mo., Kansas City.—Automobiles.—Automobile Sales Co., capital \$24,000, incptd. by W. C. Howard, R. J. Omeara and J. J. Murphy. Mo., Kansas City.—Assembling Plant.—Ford Motor Co. (main office Detroit, Mich.) let contract Collins Bros. of Rock Island, Ill., to erect addition to plant at 11th St. and Winchester Ave.; 3 stories; 125x400 ft.; brick, terra-cotta and reinforced concrete; estimated cost \$350,000; Albert Kahn, Archt., 58 Lafayette Bldg., Detroit. (Lately noted.)

Mo., Kirksville.—Garage.—Chas. S. Sands will erect garage and supply room.

Mo., St. Louis.—Motor Trucks.—Mogul Motor Truck Co., 6100 Maple Ave., will erect building; 78x167½ ft.; mill construction; install lathes, presses, drills, etc., costing \$50,000; machinery purchased; open building bids about Aug. 1; P. J. Bradshaw, Archt., St. Louis. (Lately noted.)

Mo., St. Louis.—Motor Cars.—All-Steel Motor Car Co., capital \$400,000, incptd. by A. C. Duncan, Fred V. L. Smith and Hunter Woodson.

N. C., Asheville.—Garage.—S. B. Stedman will erect garage on Depot St.; 95x55 ft.; galvanized iron; pine floor; cost \$3500.

N. C., Wilmington.—Automobile Line.—Auto Transit Co., capital \$25,000, incptd. by C. D. Weeks, N. G. Shaw and Jitney Bus Co.

S. C., Rock Hill.—Garage.—Rodney-Reid Garage, capital stock \$1000, incptd. by Rodney Reid and Bessie Lemond Reid.

Tenn., Nashville.—Automobiles.—Nashville Buick Co., capital stock \$12,000, incptd. by Winston Caldwell and others.

Tenn., Tullahoma.—Garage.—S. H. Bixey will erect fireproof garage.

Tex., Fort Worth.—Automobiles.—Harrison-Green Motor Car Co., capital stock \$6000, incptd. by J. H. Green, S. M. Harrison and W. M. Harrison.

Tex., Houston.—Garage.—F. H. Stewart will build garage costing (without mechanical equipment) \$11,000; ordinary construction; brick; 1 story and basement; 120x50 ft.; composition (pitch and gravel) roofing; J. H. Williams, Contr., Kiam Bldg.; Alfred C. Finn, Archt., 206 Pearce-Woolworth Bldg., both of Houston.

Tex., San Antonio.—Automobile Line.—Jitney Transportation Co. of Texas, capital stock \$50,000, incptd. by L. M. Enlet, W. T. Crow and John Neidert.

RAILWAY SHOPS, TERMINALS, ROUNDHOUSES, ETC.

Tenn., Jackson.—Illinois Central R. R., A. S. Baldwin, Ch. Engr., Chicago, Ill., does not contemplate any extensive improvements at Jackson this year, only work under consideration being of minor nature and will be undertaken by its local organization. (Lately reported to build larger roundhouse and turntable.)

ROAD AND STREET WORK

Ala., Selma.—Dallas County Board of Revenue let contract Central Alabama Construction Co. of Wetumpka, Ala., and D. R. Cook & Co. of Selma, Ala., to construct 10½ mi. pike road connecting Safford and Blalock, South Dallas county, and from Valley Creek to Parker's Mill, West Dallas county; P. H. Pitts, Probate Judge. (Call for bids lately noted.)

Ala., Cloverdale.—Town will construct concrete curb and gutters; W. R. McDade, Town Clerk, receives bids until July 27; Smith & Carter, Engrs., Montgomery; J. M. Foster, Mayor. (See Sewer Construction.)

Ala., Greensboro.—Hale county will grade, drain and surface with gravel part of Greensboro and Uniontown Rd.; expenditure \$428.16; County Commrs. receive bids until July 27; W. S. Keller, State Highway Engr., Montgomery. (See Machinery Wanted—Road Construction.)

Fla., Fellsmere.—City, C. W. Talmadge, Chief City Commr., contemplates paving on Broadway, about 2864.56 ft., south of right of way of Fellsmere R. R.; considering sand-asphalt, 3 or 4 in. thick; 60-ft.-wide pavement, with concrete curb or concrete curb and gutter; J. W. LaBruce, City Engr.

Fla., Kissimmee.—Osceola county will construct 2½ mi. brick road; estimated cost \$35,000; County Commrs. invite bids until July 5; R. H. Ludlum, Engr. (See Machinery Wanted—Road Construction.)

Fla., Lake City.—Board of Public Works, A. G. Bule, Chrmn., has about \$10,000 available for expenditure to construct asphalt macadam or brick streets; about 2 mi. of work involved; A. S. Miller, City Engr. (City lately noted as having cancelled bids for paving, etc.)

Fla., Sarasota.—City will construct 14,000 sq. yds. paving on Palm and Strawberry Aves.; invites bids until July 24 on brick, asphaltic concrete, modified asphalt and fibered asphalt; Fitch P. Wright, Commr. of Public Works. (See Machinery Wanted.)

Fla., St. Augustine.—State will construct 10,000 sq. yds. No. 2 vitrified brick roadway with concrete curbing within State Camp Grounds at Black Point; J. Clifford R. Foster, State Arsenal, St. Augustine, receives bids until July 2. (See Machinery Wanted—Paving.)

Fla., Tampa.—City will pave with sand asphalt 3200 sq. yds. on N. Boulevard, 300 sq. yds. on Highland Ave. and 2900 sq. yds. on streets surrounding Highland Park; Commissioners of Public Works, D. B. McKay, Chrmn., receive bids until July 6. (See Machinery Wanted—Paving.)

Ga., Boston.—City contemplates 5 blocks of street paving. Address The Mayor.

Ga., Cartersville.—City votes July 17 on \$15,000 bonds to improve streets; G. W. Young, Mayor.

Ga., Lafayette.—Walker county votes July 7 on \$75,000 bonds to construct roads. Address County Commrs.

Ga., Rome.—Floyd County Commrs. will construct 1 mi. of road between Rome and Lindale.

Ga., Savannah.—Chatham county will vote latter part of August on \$375,000 bonds to construct road to Tybee and \$225,000 for permanent roads. Address County Commrs.

Ga., Trenton.—Dade county will improve Chattanooga-Birmingham Highway; Road Commrs., I. H. Wheeler, Chrmn., receives bids until July 6; Edward E. Betts Engineering Co., Engrs., 703 James Bldg., Chattanooga, Tenn. (See Machinery Wanted.)

Ky., Carlisle.—Nicholas County Fiscal Court will reconstruct road from Carlisle to Millersburg, 7.12 mi.; bids opened June 29; is reconstructing Carlisle and Sharpsburg pike from Locust Grove pike to Bath county line (for which bids were lately noted rejected) under supervision of Engr. Downing of State Roads Dept.

Ky., Catlettsburg.—Boyd County Commrs. let contract John Stender of Huntington, W. Va., at about \$24,000 to construct 1 mi. paved road from Catlettsburg to Ashland; width 20 ft.; concrete base.

Ky., Lexington.—Fayette County Commrs. plan construction of 22 mi. asphalted Dixie highway across county, 5 mi. similar highway (State-aid) to Jessamine county line, 4 mi. asphalt paving on Cleveland Pike through Chilesburg to Athens, etc.

Ky., Owensboro.—Davies county defeated \$200,000 bonds to construct roads. (Noted in April.)

Ky., Stanford.—Lincoln county votes Sept. 19 on \$130,000 bonds to construct roads. Address County Commrs.

La., Amite.—Tangipahoa parish let contract J. P. Kennedy, Baton Rouge, La., at \$8000 to construct dirt roads; 30,000 cu. yds.; to be graveled later; system to cost \$48,000; J. E. Kerrigan, Engr., Hammond, La. (Bids lately noted.)

La., Baton Rouge.—City let contract G. W. Prutsman of Baton Rouge at \$150,000 to construct about 11 mi. gravel streets with asphalt binder and at \$50,000 for 20,000 yds. vertical fiber brick paving; John J. Mundinger, City Engr. (Call for bids lately noted.)

La., Bogalusa.—City contemplates voting on \$200,000 bonds to gravel streets, etc. Address The Mayor. (See Water-Works.)

La., Mansfield.—Town will construct about 10,130 sq. yds. street paving, 3500 lin. ft. curbing and 269 lin. ft. storm sewers; bids until July 6; separate bids on brick on concrete base, sheet asphalt, bitulithic on concrete base, concrete, creosoted wood blocks and asphaltic concrete; E. D. Huson, Town Clerk; E. E. Swope, Town Engr. (See Machinery Wanted—Paving.)

La., New Orleans.—City will construct road from point connecting with Chef Meunier Rd., near Chef Meunier, and thence to Rigolets; bids until July 27; A. G. Ricks, Commr. of Public Finances. (See Machinery Wanted—Road Construction.)

La., New Orleans.—Jefferson Parish Police Jury authorized H. L. Zander, Parish Engr., to apply Tarvia to Metairie Ridge Rd.; estimated cost \$18,000; day labor.

Md., Baltimore.—City will oil about 4.9 mi. of macadam roads at Loch Raven; contract No. 42, Improvement of Gunpowder Supply; Section No. 1, 24,916 sq. yds.; Section No. 2, 9540 sq. yds.; bids until July 7; bids lately noted to be opened June 16; Robt. L. Clemmitt, Acting Water Engr. (See Machinery Wanted—Road Oiling.)

Md., Cumberland.—City will construct about 270 ft. concrete curb and 225 sq. yds. concrete sidewalks on Water St. in rear of water-works lot; bids until July 1; Jas. P. Gaffney, City Engr. (See Machinery Wanted—Paving.)

Md., Elkton.—Cecil County Commrs. let contract Junata Paving Co., Philadelphia, Pa., at \$36,827.75 to construct 3.77 mi. road from Cecilton to Warwick, and E. Ward Brown of Port Deposit, Md., at \$28,276.71, 2.56 mi. from Rowlandsville to Five Points; W. C. Martindell, Clerk. (Call for bids lately noted.)

Md., Upper Marlboro.—Prince George's county will construct 1.59 mi. State-aid highway on Riggs Rd. from Section 1 to Avelier; County Commrs. receive bids until July 6. (See Machinery Wanted.)

Miss., Hazlehurst.—Highway Commrs., Supvrs. Dist. No. 5, Copiah county, receive bids until July 6 for road improvements lately noted; to include clearing, grubbing, grading, surfacing, concrete, etc.; concrete for smaller bridges, large culverts, and abutments of large bridges; vitrified, cast or corrugated iron pipe or concrete for drains; Com. will furnish gravel and culverts; plans, profiles, etc., at office Chancery Clerk of Copiah County and of Xavier A. Kramer, Engr., Crystal Springs and Magnolia, Miss.; engineer will furnish specifications and blank forms. (See Machinery Wanted—Road Construction.)

Miss., Laurel.—City, D. F. Gardiner, Clerk, will make lately-noted street improvements; bids until July 29; 27,753 sq. yds. asphalt, 10,078 sq. yds. wood block, 23,098 sq. yds. gravel pavements and 35,200 sq. ft. concrete sidewalks; H. W. Bell, City Engr. (See Machinery Wanted—Paving, etc.)

Miss., Meridian.—Good Roads Com. of Beat 1, Lauderdale county, invites bids until July 9 to construct streets and highways in and near Meridian; macadam construction; later to be treated with bituminous wearing surface; \$50,000 bonds lately reported voted; J. T. Pinkston, Engr., Court-house Bldg., P. O. Box 73, Meridian. (See Machinery Wanted—Road Construction.)

Mo., Cartersville.—City Engr. will prepare plans and specifications for sidewalk paving on Main St. from Allen to Pine, 10 blocks; curbing and guttering of Tennessee Ave. from Main to Lead St. and sidewalks on N. Fountain St. from Main St. to alley, 100 ft.; estimated cost \$6000.

Mo., Joplin.—City let contract D. W. Spooner & Co. at \$2129.64 to oil 19 blocks.

Mo., Joplin.—City Com. invites bids to macadamize Willard, Adelia and 22d Sts.

Mo., Webb City.—City will construct concrete sidewalks, grade, etc., both sides of Hall St. from Garrison to Noble Ave.; also subgrade and gravel at grade roadway of Austin St. from Madison to College St.; bids until July 6; Leon E. Briggs, City Engr. (See Machinery Wanted—Paving, etc.)

N. C., Nashville.—City will construct 1250 sq. yds. concrete sidewalk and 3100 lin. ft. concrete curb; bids opened June 26; Decker & Wright, Engrs., Nashville; M. W. Lincke, Mayor. (See Machinery Wanted—Paving.)

Okla., McAlester.—McEachin & McEachin are lowest bidders at \$12,350 to pave 3d St.; J. I. Wood, Mayor.

Okla., Tulsa.—City let contract Jos. T. Lantry of Tulsa to repair asphalt street paving.

Okla., Tulsa.—City let contract John E. Nolan of Oklahoma City and F. E. McCormick of Tulsa to pave portions of Haskell and Latimer Sts., Boston Ave. and 2 alleys with brick and asphalt; T. C. Hughes, City Engr. (Call for bids lately noted.)

Tenn., Chattanooga.—City will repave portions of Market and E. 9th Sts.; creosoted wood block or sheet asphalt paving; about 20,000 sq. yds.; E. D. Bass, Commr. Dept. Streets and Sewers, receives bids until July 9. (See Machinery Wanted—Paving.)

Tenn., Columbia.—Maury county is reported to vote on \$200,000 bonds to construct roads. Address County Commrs.

Tenn., Jamestown.—Fentress county, Arthur Gernt, Allardt, Tenn., Secy., contemplates building 35 mi. road; bonds to be sold July 3; construction soon after; engineer not selected; lately noted to issue \$150,000 bonds to construct "Dixie Short Route." (See Machinery Wanted—Road Machinery.)

Tenn., Memphis.—City will pave Manassas St. from Union to Beale Ave.; 700 sq. yds. concrete paving, including grading; 20 lin. ft. granite curb reset and 50 sq. ft. sidewalk removed and replaced; also a Mississippi Blvd. from Calhoun Ave. to Lauderdale St.; 7100 sq. yds. asphaltic concrete paving; 300 sq. ft. granolithic sidewalk; 300 sq. ft. concrete water table; 200 lin. ft. 6-in. granite curb removed; 176 lin. ft. 6-in. granite radius curb corners furnished in set; 225 lin. ft. concrete box drains, with inlets, manholes, etc.; bids opened June 29; E. H. Crump, Mayor; C. C. Pashby, City Clerk. (See Machinery Wanted—Paving.)

Tenn., Mt. Airy.—Sequatche county is reported to issue \$50,000 bonds to construct roads. Address County Commrs.

Tex., Abilene.—Taylor county, Precinct No. 3 (including Buffalo Gap), contemplates voting on \$50,000 bonds to construct roads. Address County Commrs.

Tex., Abilene.—Taylor county, Precinct No. 2 (including Merkel), contemplates voting on \$150,000 bonds to construct roads. Address County Commrs.

Tex., Belton.—Bell County Commrs. let contract J. F. Hamer to build 7 mi. road in Holland Precinct, including 5 mi. on Little River-Sparks Rd. and 2 mi. for connecting Bartlett-Holland Rd.

Tex., Clarksville.—City let contract H. K. McCollum Construction Co. of Fort Worth at \$65,000 for 25,000 sq. yds. Thurber brick paving.

Tex., Corsicana.—City will improve W. 7th Ave. from S. 18th to S. 28th St.; J. A. Harper, City Secy., receives bids until July 6.

Tex., Cuero.—DeWitt county, Road Dist. No. 4, defeated \$58,000 bonds to construct roads. (Lately noted.)

Tex., Dallas.—City let following contracts for street paving: Uvalde Rock Asphalt Co., Beaumont, at \$69,281, to pave Oak Lawn, Caddo and Sycamore Sts.; Levy & Levy, Muskogee, Okla., at \$38,557, Bishop St.; Texas Bitulithic Co., Dallas, at \$22,607, Bellevue St.

Tex., El Paso.—El Paso county votes July 27 on \$750,000 bonds to construct roads; proposed to build trunk line, 50 mi. long, of cement or concrete. Address County Commissioners.

Tex., Fort Worth.—City will pave Richmond Ave. from Evans to New York Ave., containing about 1155 sq. yds., and Granger St. from Broadway to Peter Smith St., containing about 2166 sq. yds., with asphalt macadam or asphaltic concrete pavement; F. J. Von Zuben, City Engr., receives bids until July 6; R. G. Littlejohn, Commr. of Streets. (See Machinery Wanted—Paving.)

Tex., Longview.—Gregg County Commrs. will grade and surface with stone and gravel 15 mi. of Shreveport-Dallas highway; bids until July 14; D. K. Caldwell, County Engr. (See Machinery Wanted—Road Construction.)

Tex., McKinney.—Collin county will construct 18-ft. cement road from end of paving on S. Tennessee St. to Pecan Grove Cemetery, about ½ mi. Address County Commrs.

Tex., Orange.—Orange county, Precinct No. 3, defeated \$25,000 bonds for road construction. (Lately noted.)

Tex., Port Lavaca.—City votes July 27 on \$17,000 bonds to construct roads, streets and bridges; H. C. Innis, Mayor. (Lately noted.)

Tex., Rockwall.—Rockwall county voted \$25,000 bonds to construct roads across East Fork leading into Rockwall. Address County Commrs.

Tex., San Antonio.—City will pave 11 streets; City Commrs. invite bids.

Tex., Sherman.—Grayson county, Howe precinct, voted \$60,000 bonds to construct roads. Address County Commrs.

Tex., Sherman.—Grayson County Commrs. Court retained Julian C. Feild, Consult. Engr., 106-108 Feild Bldg., Denison, to design and supervise construction of highway system provided for by \$900,000 bond issue;

planned to construct 25 mi. road, to include belt road 100 mi. long, with 125 mi. lateral roads. (Bond issue of \$900,000 lately noted voted.)

Va., Lebanon.—Russell county will grade about 1½ mi. of road between J. T. Candler's and Fincastle Rd.; bids until July 6; G. P. Coleman, State Highway Commr., Richmond. (See Machinery Wanted—Road Construction.)

Va., Richmond.—City let contracts aggregating \$50,000 for street improvements: W. E. Carter at \$2401.40, retaining wall between Cary St. and Mayo Bridge; C. M. Weinbaum, granite curbing; Nicholas & Henley, granolithic sidewalks; will readvertise for bids for vitrified brick paving; all on 14th St.; John Curley at \$4500 to improve Cary St. Rd. to new city limits with bituminous macadam; A. L. Phillips' Sons at \$6000, Broad-St. Rd. from Belt line to city limits with gravel; K. L. Black & Co. at \$10,000, Hermitage Rd. from Leigh St. to Bellevue, gravel; W. P. Veitch at \$1200, gravel Mechanicsville turnpike to new city limits; at \$500 to gravel Nine-Mile Rd. to new city limits, and at total of \$2200 to improve Creighton Rd. at Nine-Mile to city limits, 9th St., Fulton and Osborn turnpikes to city limits, and Williamsburg Ave. to National Cemetery; Chas. E. Bolling, City Engr.

W. Va., Charleston.—City will pave and curb Laurel Ave. from Myrtle to Neal Ave., Neal Ave. from Laurel to Walnut Ave., Walnut Ave. from Bridge to Neal Ave. and from Neal to Locust Ave.; B. A. Wise, City Mgr., receives bids until July 5; consider all well-known classes of paving material; J. M. Clarke, City Engr., Lowenstein Bldg.; O. B. Bobbitt, City Clerk, City Hall. (See Machinery Wanted—Paving.)

W. Va., Hinton.—Summers county, Greenbrier Dist., votes July 31 on \$150,000 bonds for road construction. Address County Commissioners.

W. Va., Wellsburg.—Brooke County Court voted to build brick road from Follansbee northward to Bates Bridge, 1 mi.; Steubenville, Wellsburg & Wierton Street Ry. Co. to pay part of cost.

SEWER CONSTRUCTION

Ala., Cloverdale.—Town will construct sanitary and storm sewers, concrete curb and gutters; W. R. McDade, Town Clerk, receives bids until July 27; Smith & Carter, Engrs., Montgomery; J. M. Foster, Mayor. (See Machinery Wanted—Sewer Construction.)

Ark., Benton.—City let contract J. B. McCrary Co. of Little Rock, Ark., and Atlanta, Ga., at \$90,000 to construct sewer system and water-works. (See Water-works.)

D. C., Washington.—Dist. Commrs., 509 District Bldg., will construct 6000 lin. ft. sewer 10 to 12 in. diam.; bids until July 7. (See Machinery Wanted—Sewer Construction.)

Fla., Clearwater.—City let contract R. L. Davis at \$2779.40 to construct storm water drains.

Fla., Miami.—City votes Aug. 19 on \$50,000 bonds to construct sewers; B. H. Klyce, City Engr. (See Miscellaneous Construction.)

Ga., Boston.—City engaged W. Hopson Goodloe, C. E., Macon, to prepare plans and specifications for sewer system. (City lately reported as considering bond election.)

Ga., Cartersville.—City votes July 17 on \$40,000 bonds to construct sewer and drainage system; G. W. Young, Mayor. (Lately noted.)

Ga., Macon.—J. J. Gaillard, City Engr., is preparing plans and specifications for sewers in Vineville; cost \$30,000 to \$25,000.

Ga., Richland.—City plans \$15,000 expenditure for sewers; 4½ mi. of sewer construction; let contract to J. B. McCrary Co., Atlanta, Ga.; W. M. Crook, Engr. in charge, Macon, Ga. (Lately noted.)

Ga., Tennesse.—City engaged Crook & Lan-near, Engrs., Macon, Ga., to prepare plans for sewer, water and light plant construction; now making surveys.

La., Bogalusa.—City contemplates voting on \$200,000 bonds to purchase sewer system, etc. Address The Mayor. (See Water-Works.)

Miss., Clarksdale.—City voted \$150,000 bonds to extend sewer system, etc. Address City Commrs. (See Water-Works.)

Miss., Meridian.—City votes July 23 on \$25,000 bonds to extend sanitary sewers and construct concrete bridges. Address The Mayor. (Lately noted.)

Miss., Okolona.—City let contract Sullivan, Long & Haggerty of Bessemer, Ala., at \$25,100.40 to construct sewer system; 11,550 cu. yds. earth excavation, 9592 cu. yds. rock

excavation, 28,230 lin. ft. 8-in. pipe, 6530 lin. ft. 10-in. pipe, 4440 lin. ft. 12-in. pipe, 54 man-holes, 25 flush tanks and settling tanks; Frank L. Wilcox, Engr., Syndicate Trust Bldg., St. Louis, Mo.; J. H. Davis, City Clerk. (Call for bids lately noted.)

Mo., Maplewood.—City let contract Conney Construction Co. at \$51,538 to construct Maplewood public sewer No. 1; 7-ft. tunnel sewer through solid rock; S. W. Shinkel, Engr. (Call for bids lately noted.)

Mo., St. Louis.—Board of Public Works contemplates construction of following sewers: Baden sewer, Dist. No. 2, cost \$49,000; Harlem Creek sewer, Dist. No. 12, \$7900; Harlem Creek sewer, Dist. No. 13, cost \$11,400; Penrose Joint Dist. sewer, \$7600.

Mo., Webb City.—City will construct sanitary sewer in Sewer Dist. No. 44; bids until July 6; Leon E. Briggs, City Engr. (See Machinery Wanted—Sewer Construction.)

Okla., Tulsa.—City will construct storm sewers, including catch-basins, manholes, etc., to drain portion of Main St.; City Commrs. receive bids until July 6; E. B. Cline, City Auditor. (See Machinery Wanted—Sewer Construction.)

Tenn., Cleveland.—City engaged Walter G. Kirkpatrick of Birmingham, Ala., as engineer to make surveys, prepare plans and supervise construction of sewer system; estimated cost \$75,000. (Lately noted to issue \$75,000 bonds.)

Tenn., Henderson.—City, J. J. Galbraith, Mayor, will not issue lately-noted sewer bonds. (See Water-works.)

Va., Richmond.—City let contract A. W. Maynard at \$14,000 to construct Canepa St. sewer from Dickinson St. to Gillies Creek; Chas. E. Bolling, City Engr.

TELEPHONE SYSTEMS

Ky., Nannie.—Grassy & Blackwater Telephone Co. inceptd. by J. C. Murphy, M. N. Nickell, J. T. Lewis and others.

Ky., Salem.—Grassy & Helecheva Telephone Co. inceptd. by M. J. Amyx, S. R. Amyx, J. S. Amyx and W. P. Haulsey.

Md., Baltimore.—Chesapeake & Potomac Telephone Co. let contract to Edw. Brady & Sons, 1113 Cathedral St., Baltimore, to add to and remodel exchange building at 5 Light St.; cost \$15,000; McKenzie, Voorhees & Ghollin, Architects, New York.

N. C., Bostic.—Cherry Mountain Telephone Co. inceptd. by D. D. Fortune, John Philbeck and Lee Goss.

Tenn., Celina.—Union Telephone Co., capital \$1000, inceptd. by J. B. Walker, Sam Keisling, W. J. Maynard and others.

Tenn., Auburn, R. F. D. from Woodbury.—Home Telephone Co., capital \$1000, inceptd. by H. H. Kennedy, C. R. Robinson, J. D. Odum and others.

Va., Locust Grove.—Locust Grove Mutual Telephone Co., capital \$5000, inceptd.; W. J. Kropff, Prest., Copper Hill, Va.; G. W. Martin, Secy.-Treas., Terrys Fork, Va.

TEXTILE MILLS

Ala., Alexander City.—Cotton Goods.—Russell Mfg. Co. will add 2000 spindles.

Ga., Chickamauga.—Bleachery.—Crystal Springs Bleachery Co. will erect 2-story addition to bleachery; also erect addition to warehouses.

Ga., Valdosta.—Hosiery.—R. B. Oliver and Knox Burger of Maryville, Tenn., E. P. Rose, Geo. W. Varn and A. J. Strickland of Valdosta and others will organize \$50,000 company to establish hosiery mill; erect brick building, 50x200 ft.; install about 100 knitting machines, dyeing and finishing plant; electric power to operate plant; power to be secured from local transmission system; will make provision to enlarge building and install additional machines later.

Miss., Meridian.—Bleachery, etc.—T. L. Wainwright of Stonewall, Miss.; C. L. Gray, J. G. Daly and J. M. Guthrie of Meridian will establish plant capitalized at \$35,000; will bleach, dye and treat cotton linters, yarn, etc., for surgical purposes.

N. C., Concord.—Cotton Goods.—J. A. Goodman and Will Flowe propose forming company to build cotton mill.

N. C., Forest City.—Knit Goods.—W. P. Leister will establish knitting mill; has let contract for erection of building.

N. C., Long Island.—Cotton Goods.—Long Island Cotton Mills will expend about \$20,000 in improvements; plans to enlarge head of race mill to secure sufficient supply of water to increase capacity 75 H. P.; with additional power, proposes to begin manufacture of rope and enlarge capacity of cotton gin;

increased common stock to \$40,000 and issued additional preferred stock.

N. C., Newells.—Cotton Goods.—C. W. Johnson and A. B. Saunders of Highland Park Mfg. Co., Charlotte, N. C., are reported planning to build 10,000-spindle cotton mill.

S. C., Anderson.—Cotton Cloth.—Equinox Mill let contract Gallivan Building Co., Greenville, S. C., for clothroom and cloth-storage warehouse; slow-burning mill construction; tar and gravel roofing; mill construction floor; open gravity system heating plant; J. E. Sirrine, Archt., Greenville, S. C. (Lately noted to build addition, etc.)

WATER-POWER DEVELOPMENTS

Ala., Sylacauga.—City proposes \$4000 to \$5000 expenditure for 250x9-ft. concrete dam; dam will have 2 swing gates; develop about 200 H. P. for transmission by electricity; location about 18 mi. from Sylacauga; F. H. Pike, Engr., Sylacauga; J. E. Jordan, City Clerk. (Bids lately noted invited.)

N. C., Long Island.—Long Island Cotton Mills will enlarge head of race mill to secure supply of water, increasing capacity by 75 H. P. (See Textile Mills.)

WATER-WORKS

Ala., Ashland.—City, H. L. Adair, Mayor, will construct water-works; includes 4 mi. 8, 6 and 4-in. cast-iron and 2-in. galvanized pipe, with hydrants, valves, etc.; 150,000-gal. earth reservoir, lined; pump-house with motor-driven pump; masonry dam and intake; Edgar B. Kay, Engr., Tuscaloosa, Ala. (See Machinery Wanted—Water-works Construction.)

Ark., Benton.—City let contract J. B. McCrary Co., Little Rock, Ark., and Atlanta, Ga., at \$90,000 to construct water-works and sewer system; water-works capacity, 175,000 gals. daily; 300,000-gal. settling tank; Geo. T. Hughes and others Commrs. of Improvement Dist. (Noted in May.)

Ark., Berryville.—City is experimenting with deep-well proposition for water supply; will drill 600 or 800 ft.; has water system but inadequate supply of water; if water is found will probably need pump; R. C. Gibson, Mayor. (City lately noted to drill deep well for water-works.)

Fla., Pensacola.—City Commrs. receive bids until July 6 to erect building at pumping station of Water Dept.; information, plans, specifications, etc., obtainable from L. Earle Thornton, City Engr., 203 City Hall; Thos. H. Johnson, Commr. of Public Works. (Lately noted to have voted \$20,000 bonds.)

Ga., Cartersville.—City votes July 17 on \$5000 bonds to extend water mains; G. W. Young, Mayor.

Ga., Elberton.—City Council is reported to have authorized purchase of electric pump at water-works on Beaver Dam Creek. Address The Mayor.

Ga., Tennesse.—City engaged Crook & Lan-near, Engrs., Macon, Ga., to prepare plans for water, light and sewer plant construction; now making surveys.

La., Bogalusa.—City contemplates voting on \$200,000 bonds to purchase water-works and sewer system, gravel streets and erect schools, city hall and jail. Address The Mayor.

Md., Baltimore.—Board of Awards accepted plans and specifications for 20,000,000-gal. centrifugal pump and electric-power equipment for Eastern pumping station of Water Dept.; machinery to include three 250-kva. transformers, 800 H. P. motor, 25 H. P. motor, etc.; plans, etc., on file and obtainable from office Water Engr., City Engr.; bids until July 14; Robt. L. Clemmitt, Acting Water Engr.; Ezra B. Whitman, Consult. Engr.; both of Baltimore. Lately noted. (See Machinery Wanted—Pump, etc.)

Miss., Clarksdale.—City voted \$150,000 bonds to enlarge water and electric-light plant, extend sewer system, increase fire department, purchase automobile street sprinklers and erect school and \$35,000 city hall. Address City Commrs. (Lately noted.)

Mo., Kirksville.—City rescinded action calling for election to vote on \$70,000 bonds to complete rebuilding water-works and to build and equip electric-light plant. Address The Mayor. (Lately noted.)

Miss., Kosciusko.—City voted \$30,000 bonds for municipal ownership of water and electric-light plant; proposes to erect combined water and electric-light plant to furnish city and commercial service; C. O. Townsend, City Clerk.

Okla., Chandler.—City voted \$5000 bonds to improve water-works. Address The Mayor.

Okla., Jones.—Board of Trustees will call election to vote bonds for water-works and electric lighting; retained Benham Engineering Co., Colcord Bldg., Oklahoma City, to draw plans, specifications and estimates.

Tenn., Henderson.—J. I. Galbraith, Mayor, states that, owing to legal technicality, city will not issue bonds lately noted voted for water-works, sewer system and electric-light plant.

Tex., Beaumont.—City will construct 30-in. cast-iron pipe line across Neches River, canal intake and other improvements in connection with canal extension for water-works system; J. G. Sutton, City Secy., receives bids until July 14; Burns & McDonnell, Engrs., 821-825 Scarritt Bldg., Kansas City, Mo. (See Machinery Wanted—Water-works.)

Tex., Mineral Wells.—City will vote on \$74,000 bonds to construct water-works; also on purchase of Lake Pinto, present source of water supply. Address The Mayor.

Tex., Moody.—Gormany Bros. will rebuild water and ice plants lately noted burned at estimated loss of \$15,000; former will include steel tower 100 ft. high with capacity 56,500 gals. water; engine-room and pump-house of brick and steel, with metal doors and window shutters.

WOODWORKING PLANTS

Ala., Eoline.—Cooperage.—O. T. Grimes & Son will rebuild plant burned at estimated loss of \$12,000; may rebuild at Tuscaloosa.

Ark., Texarkana.—Store Fixtures and Refrigerators.—R. R. Clough, J. R. Jones and M. Reinholdt of Fort Smith, Ark., will establish plant to manufacture store fixtures and refrigerators.

Ky., Louisville.—Seating.—Bennett Seating Co., capital stock \$5000, inceptd. by Geo. W. and Hattie T. Bennett and W. M. Dorsey.

Okla., Ardmore.—Boxes and Baskets.—Earl Allen of Durant, Okla., is reported as planning erection of box and basket factory.

Tex., Houston.—House.—T. J. Williams House Mfg. Co. organized with T. J. Williams, Prest. and Mgr.; S. B. Hicks and R. C. Williams, V.-Ps.; P. S. Wiggins, Secy.; has building; install planing machine, trimmer, cut-off saws, sander, hand planing machine and band saw; equipment purchased. (Lately noted inceptd. with \$25,000 capital.)

Va., Richmond.—Furniture and Scythes.—H. D. Brinzer contemplates building plant to manufacture furniture and scythes.

FIRE DAMAGE

Ala., Attalla.—Mt. Carmel Church. Address The Pastor.

Ala., Dadeville.—Two buildings owned by B. S. Smith estate; loss \$16,000.

Ark., Claunch.—H. E. Hafer's residence and tenant-house.

Ark., Little Rock.—E. C. Wehrfritz Machinery Supply Co.'s warehouse; loss \$100,000.

Ala., Montgomery.—Montgomery Klenol Co.'s plant; estimated loss \$30,000.

Ala., Montgomery.—T. C. Watts' residence at 22 Wilson St., owned by F. M. McPherson; loss \$3000.

Fla., Elkton.—Speights & Chambers' store, Fla., Wauchula.—Mitchell Block at Main St. and 6th St.

Ga., Atlanta.—Mrs. William E. Yeates' 2 residences at 322-24 W. Peachtree St.

Ga., West Point.—Farmers' Products Co.'s gin; estimated loss \$18,000.

Ky., Louisville.—Bullock Lumber Co.'s plant; estimated loss \$50,000.

Ky., Louisville.—Spencer Courier Publishing Co.'s plant; estimated loss \$11,000.

Ky., Whitesburg.—B. & O. Boarding-House; loss \$6000 to \$9000.

Ky., Winchester.—Taylor Day's building, occupied as restaurant by Mrs. Robt. Profit; loss \$8000.

La., Berwick.—Geo. Vinson Shingle & Mfg. Co.'s plant; estimated loss \$25,000.

La., Shreveport.—W. L. Wisdom's residence was not damaged by fire, as lately reported.

Md., Salisbury.—Baltimore, Chesapeake & Atlantic Ry.'s car shop; A. C. Shand, Ch. Engr., Philadelphia, Pa.

Miss., Corinth.—Corinth Steam Laundry; Gay-Ola Bottling Works; Corinth Ice Cream Co.'s plant; all occupied one building, owned by J. S. Leebman.

Miss., Hwannee.—Brown Lumber Co.'s planing mill; estimated loss \$50,000.

Miss., Starkville.—Saw and planing mill of W. W. Hall of Longview, Miss.

N. C., Azalea.—Azalea Woodworking Co.'s plant; loss \$40,000 to \$50,000.

N. C., Edwards.—H. I. Tripp's store; Dr. Oswald Kafer's residence.

N. C., Elmwood.—C. F. Shepherd's residence; loss \$3000.

N. C., Wadesboro.—P. T. Rhyme's residence on Morven Rd.

S. C., Columbia.—Miller Meat Market; Lawton & Gillespie's store; loss \$5000 to \$6000.

Tenn., Bull's Gap.—J. B. Mitchell's restaurant; P. R. Quillen's warehouse; Cox & Pennington's stable and garage; Dr. H. P.

Marshall's dwelling; J. E. McCullough's building.

Tex., Marlin.—W. J. Walker's store and lumber yard at McClanahan Station; loss about \$3500.

Tex., Waxahachie.—Ira Green's residence, 8 mi. southwest of Waxahachie; loss \$5000.

DAMAGED BY STORM

Ark., Gans.—Town Hall; Methodist Church (address The Pastor); R. S. Harris' store; loss \$10,000.

BUILDING NEWS

BUILDINGS PROPOSED

APARTMENT-HOUSES

D. C., Washington.—Harry Wardman, 1430 K St. N. W., will erect apartment-house at 1860 Colorado Ave.; 3 stories; 38.5x54 ft.; brick and concrete; slag roof; steam heat; electric light; cost \$25,000; A. M. Schneider & Co., Archts., 1430 K St. N. W., Washington.

Fla., Orlando.—Dr. J. N. McElroy will erect 2 buildings for stores and apartments. (See Stores.)

Fla., Tampa.—R. O. McDonald will erect 2-story apartment-house on W. Park Ave.; cost \$4000.

Mo., Kansas City.—F. M. Graves will erect 6 apartment flat at 3604 Paseo St.; brick and stone; cost \$11,500.

Mo., Kansas City.—Ann Williams will erect 2-story 4-apartment flat at 1513-15 E. 22d St.; cost \$4000.

Mo., Kansas City.—C. H. Lewis will erect 12-apartment flat at 2428-30 Brooklyn Ave.; brick and stone; cost \$10,000.

S. C., Greenville.—Gillfillin & Houston will erect apartment-house at Washington and Irving Sts.; 64x63 ft.; 2 stories on lower floor; 6 suites above; Martin & Andrews, Archts., Greenville.

Tex., Beaumont.—E. T. Barden, Prest. of Barden Electric & Machinery Co., Houston, will erect business and apartment building. (See Stores.)

Tex., El Paso.—Jolly & Morris will erect brick apartment-house in Cotton addition; 28x40x26 ft.; cost \$6000.

Tex., El Paso.—Geo. Beaudett will erect apartment-house; brick; 32x72x30 ft.; cost \$11,320.

Va., Norfolk.—J. O. Pearson will erect addition to and alter building at 321 Ward Ave.; apartments; mill construction; slate roof; warm-air heat; electric lighting; cost \$4000; bids opened June 29; Harvey Abrahams, architect, Norfolk, may be addressed.

Va., Norfolk.—M. Schnerer will erect double brick 2-story 4-family apartment-house on Colley Ave.; cost \$4250.

W. Va., Parkersburg.—Dr. Milton McNellan is having plans prepared by Frank Upman, Woodward Bldg., Washington, for apartment-house; 30x94 ft.; 2 stories; hollow tile or brick; cost about \$10,000; plans ready about July 15.

ASSOCIATION AND FRATERNAL

Ala., Anniston.—Anniston Lodge No. 443, A. F. and A. M., plans to erect lodge, store and office building at Wilmer Ave. and 11th St.; 7 stories; steel and concrete construction; 2 lower stories semi-glazed tooled terra-cotta; upper stories matt brick with terra-cotta trim; interior fireproof; cement plaster; marble, hardwood and metal interior finish; mosaic tile floors; low-pressure steam heat; ventilating system; 2 high-speed traction electric elevators; electric wiring; cost about \$75,000; L. M. Weathers, Archt., Memphis, Tenn.; J. F. Spearman, H. F. Williamson, W. S. Kilby and others, Com.

Fla., Titusville.—Indian River Lodge No. 90, F. & A. M., E. H. Pardo, W. M., will rebuild lodge and store building lately noted burned; 66x98 ft.; fireproof; probably concrete floor; electric lighting; no heating; cost \$12,000 to \$15,000. Address H. G. Wilson, Titusville. (See Machinery Wanted—Flooring.)

Ky., Louisville.—Y. W. C. A. rejected all bids to erect buildings at 2d St. and Broadway, and will receive revised bids; fireproof; composition roof; reinforced concrete floors with wood, tile and composition tops; vapor steam heat \$10,000; lighting \$3000; John Bacon Hutchings & Son, Archts., Columbia

Bldg., Louisville. Address Miss Flora B. Shank, care of Archts. (Lately noted.)

Mo., Marcelline.—I. O. O. F., W. E. Parks, Secy. Building Com., receives bids until July 12 to erect 3-story store and lodge building; F. B. Fitch, Archt., Marcelline.

Tenn., Lebanon.—A. F. and A. M. will, it is reported, erect business, office and lodge building; 7 stories on lower floor; offices on second floor; lodgerooms on upper floor; steam heat; electric lights; cost about \$75,000.

Tex., San Antonio.—Scottish Rite Masons have plans by Reuter & Harrington, San Antonio, for building at St. Marys and Convent Sts.; 70x121 ft.; ordinary construction; metal roof; concrete and wood floors; cost \$20,000; bids opened July 10; construction begins July 15. (Lately noted.)

BANK AND OFFICE

Ala., Anniston.—Anniston Lodge No. 443, A. F. and A. M., will erect lodge and office building. (See Association and Fraternal.)

Fla., Orlando.—Dr. J. N. McElroy will erect store and office building. (See Stores.)

Fla., West Palm Beach.—J. L. Dalle, Miami, Fla., will erect store and office building. (See Stores.)

Ga., Atlanta.—Frank Hawkins, Prest. of Third National Bank, is reported having plans prepared by W. T. Downing, Grant Bldg., Atlanta, for 10-story office-loft building at Walton and Fairlie Sts.; reinforced concrete frame with white pressed brick; 3 sides glass except columns; cost about \$100,000.

Ga., Savannah.—National Bank of Savannah has plans by Dennison & Hiron, 375 5th Ave., New York, and H. W. Witcover, National Bank Bldg., Savannah (Associated Archts.), to alter first floor and basement of building at Bull and Broughton Sts. for bank; fireproof; terra-cotta floor blocks and steel beams; concrete sidewalk; electric automatic elevator; cost \$40,000; bids opened June 29. Address Mr. Witcover. (Lately noted.)

Ga., Thomasville.—Citizens' Bank & Trust Co. is having plans prepared by C. Frank Galliher, 1117 Bell Bldg., Montgomery, Ala., to remodel bank building; classic front, white glazed terra-cotta and Georgia marble; interior remodeling; white tile floor and white enamel brick; plans out about July 1.

Mo., Kansas City.—Ridge Estate Co. has plans by Smith, Rea & Lovitt, Finance Bldg., Kansas City, for mercantile and office building at 910-12-14-16 Walnut St.; 57x115 ft.; 7 stories and 2 basements; fireproof; concrete slab roof; reinforced concrete floor; steam heat; electric lighting; reinforced concrete prismatic sidewalks; electric elevator; cost \$225,000; bids opened June 27. Address Archts. (Lately noted.)

N. C., Ayden.—Farmers and Merchants' National Bank has plans by Benton & Moore, Wilson, N. C., for bank building; 3 stories and basement; 25x50 ft.; composition roof; steam heat; indirect lighting; terra-cotta, tile and stone trim; cost about \$13,000.

N. C., Kinston.—Mrs. Alice Hunter and Dr. O. M. Hardy have plans by Benton & Moore, Wilson, N. C., for office building; 4 stories and basement; 63x89 ft.; built-up roof; steam heat; 3-way Luxfer vault lights; electric elevator; terra-cotta and stone trim; cost \$35,000. (Lately noted.)

Okla., Tulsa.—Col. C. B. Lynch will erect store and office building. (See Stores.)

S. C., Camden.—Henry Savage, Camden, and Jos. B. Cocker, Boston, Mass., are reported to erect bank and office building at Broad and DeKalb Sts.; cost \$40,000.

S. C., Greenville.—Southeastern Life Insurance Co., T. Oregon Lawton, Jr., Prest., will erect 24-ft. extension to building under construction; 3 stories; first floor to extend back 80 ft. and upper floors 30 ft.; cost about \$10,000.

Tenn., Lebanon.—A. F. and A. M. will, it is reported, erect business, office and lodge building. (See Association and Fraternal.)

Tenn., Maryville.—Albert B. Baumann, 713 Henson Bldg., Knoxville, Tenn., is preparing plans for store and office building. (See Stores.)

Tex., Beaumont.—C. N. Blanchette and Lynn Gilbert have plans for office and theater building. (See Theaters.)

Tex., El Paso.—Dr. Hugh W. Crouse and others plan to erect medical building at Oregon and Missouri Sts.; 8 stories; reinforced concrete; lower floor for stores, etc.; upper floors for offices, department for handling emergency surgical cases, etc.; cost about \$200,000. Dr. Crouse wires Manufacturers Record: "Proposition not advanced to construction stage."

Va., Hopewell.—Farmers and Mechanics' Bank, B. R. Walters, Prest., is erecting building; 22x32 ft.; brick and concrete; fireproof; metal roof; cement floor; cost \$2500 without equipment; steam heat, \$150; electric lighting.

CHURCHES

Ark., Rison.—Rison First Baptist Church will erect frame building. Address The Pastor.

Ky., Somerset.—Main Street Methodist Church, Rev. C. K. Dickey, pastor, will not erect church at present. (Lately reported.)

Md., Baltimore.—Union Square M. E. Church opens bids July 8 for alterations and addition to church at Calhoun and Lombard Sts.; add Sunday-school room; 2 stories; brick; marble trim; slag roof; heating and lighting reserved; hardwood floor and trim; cost about \$15,000; Haskell & Barnes, Archts., 301 N. Charles St., Baltimore.

Md., Hagerstown.—Bethel Church of God, Broadfording, will erect brick building; 42x36 ft.; Rev. Thos. J. Coffman, pastor, Hagerstown.

Miss., Charleston.—Methodist Episcopal Church will erect parsonage; J. S. Sanders, J. B. Darby, W. T. Marshall and others, Building Com.

Mo., Kansas City.—St. Michael's Church will erect building at 5000 E. 24th St.; cost \$35,000. Address The Pastor.

N. C., Asheville.—First Presbyterian Church, J. H. McConnell, Chrmn. Building Com., has plans by Wm. J. East for addition to church; brick and steel; 65x35 ft.; Johns-Manville composition roof; cost \$14,000; bids opened June 22. (Noted in May.)

N. C., Salisbury.—Reformed Church will erect granite building. Address The Pastor.

Okla., Oklahoma City.—Central Presbyterian Church will construct addition and basement and remodel present structure; Rev. Chas. Weaver, pastor.

N. C., Williamston.—Mrs. J. G. Staton is having plans prepared by Benton & Moore, Wilson, N. C., to erect building for Church of the Advent; 30x85 ft.; tile roof; steam heat; electric light; cost \$12,000.

N. C., Winston-Salem.—Southside M. E. Church, Rev. L. F. Brothers, pastor, plans to erect parsonage on church lot.

Tenn., Harriman.—First Methodist Episcopal Church, Rev. Wm. F. Pitts, pastor, plans to erect building; 2 stories; seating capacity 500; brick; plans include room for boys, with gymnasium, shower baths, etc.; cost about \$10,000.

Tenn., Nashville.—St. Columba's Church, Rev. Father Gazzo, pastor, has plans by Harry J. Frasn, Nashville, for Sodality Hall; 1 story; brick and hollow tile.

Tex., Coleman.—Methodist Church will erect building; brick construction; cost \$30,000 to \$35,000; will soon select Archt.; construction to begin by August 1. Address The Pastor.

Tex., Coleman.—First Baptist Church, Rev. J. J. Kellam, pastor, lets contract July 10 to erect building; 60x100 ft.; ordinary construction; asphalt-slate shingle roof; rift-pine floors; hot-water or steam heat; cost \$15,000; C. W. Bulger & Son, Archts., Praetorian Bldg., Dallas. Address pastor. (Lately noted.)

Tex., Dallas.—Oak Cliff Christian Church is having plans prepared by Van Slyke and Woodruff, Fort Worth, for building; 3 stories; 70x100 ft.; auditorium seating capacity, 1000; 25 Sunday-school rooms; baptistry,

choir loft, study, elders' and deacons' rooms, ladies' parlor and society rooms, reading-room, kitchen and nursery; semi-fireproof; gray pressed brick and natural or Algonite stone; warm-air heat; blower system; ornamental plaster; art glass; cost \$35,000. A. E. Ewell, pastor. (Lately noted.)

Tex., Greenville.—First Presbyterian Church has plans by Macklin & Ragsdale for building at Wesley and Pickett Sts.; 65x85 ft.; ordinary construction; terra-cotta and tile roof; steel frame; double wood floor; heating and lighting separate; contract let July 1. (Lately noted.)

Va., Newport News.—St. Paul's Episcopal Church will erect parish-house; 2 stories; brick; cost \$7500; Rev. H. G. Lane, rector.

Va., Remington.—Baptist church is having plans prepared by Spelden & Spelden, 1403 New York Ave., Washington, D. C., for addition and alterations to building; add Sunday-school room; 40x40 ft.; 1 story; brick; slate roof; steam heat; addition to main auditorium about 12x25 ft.; 1 story; remodel for baptistry, choirroom, pastor's study; cost about \$4000; R. F. Hume, Chrmn. Building Com.

Va., Roanoke.—Melrose Baptist Church is having plans prepared by N. T. Wingfield, Charlottesville, Va., for building; stone and brick; auditorium seat 2000; Sunday-school, kitchens, dining-rooms, etc.; cost about \$50,000.

W. Va., Morgantown.—Baptist church, Rev. E. E. White, pastor, will erect building.

CITY AND COUNTY

Fla., Pensacola.—Truckhouse and Stables, City accepted plans by C. Alfred, Pensacola, for truckhouse and city stables on Spring St. (Lately noted to have voted \$10,000 bonds.)

Ga., Albany.—Auditorium.—City will have plans ready about July 1 and receive bids about July 15 to erect auditorium; total cost, \$45,000; A. Ten Eyck Brown, Archt., Atlanta, Ga. (Lately noted.)

Ga., Atlanta.—Library.—City accepted plans by Henry D. Whitfield, 160 5th Ave., New York, for branch Carnegie library on South Side; cost complete \$17,000; Mrs. Percival Sneed, librarian. (Previously noted.)

La., Bogalusa.—City Hall, etc.—City contemplates election on \$200,000 bonds to erect schools, purchase present schools, erect city hall and jail, etc. Address The Mayor. (See Water-Works.)

Miss., Clarksdale.—City Hall, Fire Station, etc.—City voted \$150,000 bonds to erect city hall and fire station for auto fire truck, etc. Address The Mayor. (See Water-Works.)

Miss., Jackson.—Jail.—W. W. Downing, Chancery Clerk, is reported to receive bids until July 7 to erect reinforced concrete jail; E. J. Hull, Archt., Daniel Bldg., Jackson.

S. C., Kingstree.—Library.—City will erect \$6000 Carnegie library. Address The Mayor.

Tex., Houston.—City will erect cotton warehouse at foot of Main St.; reinforced concrete; 150x300 ft.; elevators to convey cargoes from upper floors to wharf; street entrance for each floor; cost about \$200,000; Ben Campbell, Mayor.

W. Va., Ashland.—City Hall, etc.—City is reported considering election on \$125,000 bonds to erect stone buildings for city hall and jail and brick market-house. Address The Mayor.

COURTHOUSES

Ky., Williamsburg.—Whitley county is having plans prepared by R. F. Graf & Co., Knoxville, Tenn., for alterations to courthouse; plans ready about July 16.

Louisiana.—West Carroll parish votes July 5 on new location for courthouse; will soon open bids for construction. Address Police Jury, Floyd, La.

N. C., Durham.—County Commrs. are considering erection of courthouse.

N. C., Newbern.—Craven county is having plans prepared by R. F. Smallwood, Newbern, and 569 5th Ave., New York, N. Y., for courthouse; details to be decided July 7.

Tex., El Paso.—El Paso County Commrs. are having plans prepared by Trost & Trost, El Paso, for courthouse and will probably call for bids by Aug. 1; 5 stories, with jail on roof and basement with 18-ft. ceiling; structure 260 ft. long; elevator connecting sheriff's office and jail; cork floors in all courtrooms; refrigerating plant; electricity generated in building; air-washing process for cooling and heating offices; sanitary drinking fountains; auditorium to seat 6000; cost about \$400,000. (Lately noted.)

DWELLINGS

Ala., Birmingham.—J. B. Lassiter will erect 2-story frame residence; cost \$3000; day labor.

Ark., Argenta.—J. P. Faucett has plans by Mann & Stern, Little Rock, for 3 dwellings in Faucett's Addition; 2 stories; frame; shingle roof; electric light; cost about \$8000; bids opened about July 7.

D. C., Washington.—D. M. Wells, 1730 Euclid St. N. W., will erect dwelling at Chevy Chase; 28x32 ft.; mill construction; slate or asbestos roof; electric and gas stoves; hot-water heat to cost \$250; plans and construction by owner.

D. C., Washington.—J. A. Connor & Co., 234 15th St. N. W., have plans by Clinton M. Moore for 5 dwellings at 3012-14, 3306 and 3210 and 3017 16th St. N. E.; 22x33 ft.; frame; slate roof; hot-water heat; electric light; cost \$12,000; construction by owners.

D. C., Washington.—D. J. Dunnigan, 203 Bond Bldg., planned and will erect 10 dwellings at 703-21 Newton Pl.; 17x28 ft.; brick; tin roof; cost \$17,000.

D. C., Washington.—H. R. Howenstein, 1314 F St. N. W., planned and will erect 3 dwellings at 1311-15 Maryland Ave. N. E.; 18x32 ft.; brick; tin roof; hot-water heat; electric light; cost \$7500.

D. C., Washington.—H. G. Smithy, 721 13th St. N. W., has plans by W. R. Talbott, 1314 F St. N. W., Washington, for dwelling at 1300 Emerson St.; 35x29 ft.; frame; hot-water heat; electric light; cost \$5000; construction by owner.

D. C., Washington.—Kennedy Bros., 1334 H St. N. W., have plans by A. H. Sonneman, same address, for 4 dwellings at 1829-35 Irving St.; 24 and 26.9x33 ft.; brick; slag roof; hot-water heat; electric light; cost \$24,000; construction by owners.

Fla., Bradentown.—John T. Campbell has plans by J. G. Bonniwell, St. Petersburg, Fla., for dwelling on Upham St.; 45x55 ft.; hollow tile construction; slate roof; hot-air heat; electric light; cost about \$6000; construction to begin Sept. 1. (Lately noted.)

Fla., Miami.—A. R. Smart, Oil City, Pa., will erect dwelling at Point View; 36x47 ft.; tile roof; cost \$8000. (Lately reported to have let contract.)

Fla., Miami.—Frank H. Wheeler, Indianapolis, Ind., is having plans prepared by Nolan & Schultorpe, Miami, for dwelling; reinforced concrete construction; 101x80 ft.; tile roof; cost \$30,000 to \$35,000.

Fla., Orlando.—Mrs. C. V. Caldwell will erect residence; 2 stories; 6 rooms; frame; tin roof; cost \$3000.

Fla., St. Petersburg.—Judge W. L. Pierce purchased lot on Beach Drive and 10th Ave. North and will erect bungalow; California type.

Fla., Tampa.—F. A. Parker will erect 2-story frame residence to cost \$7000; C. G. Glass, Archt., Tampa.

Ga., Atlanta.—Dr. W. W. Young will erect \$10,000 residence at Ponce de Leon Ave. and Barnett St.

Ga., Atlanta.—Mrs. A. Mathewson will erect 1-story frame dwelling on Mathewson Pl.; cost \$2800; day labor.

Ga., Atlanta.—T. C. Whitner will erect 2-story frame dwelling at 78 W. 5th St.; 12 rooms; slate roof; cost \$6000; day labor.

Ga., Atlanta.—Chas. T. Nunnally purchased lot on Ponce de Leon Ave., and is reported to erect residence.

Ga., Augusta.—Dr. Noel M. Moore purchased lot on McDowell St., 100x165 ft., and is reported to erect residence.

Ga., Valdosta.—C. J. Barton will erect bungalow; cost \$3500.

Ky., Louisville.—Chas. Plock will erect brick-veneer dwelling at 2810 W. Kentucky St.; cost \$3000.

Ky., Louisville.—Louisville Methodist Alliance will erect dwelling at 714 Sutcliffe St.; cost \$3000.

Ky., Louisville.—Margaret Palmer will erect brick-veneer dwelling at 920 Cecil Ave.; cost \$2800.

Ky., Middlesboro.—H. D. Colson, agent for Mrs. J. C. Colson, will erect dwelling on 1st St.; cost \$3000 or \$4000; further details not decided.

Ky., Mt. Sterling.—Sutton & Strother will erect residence on N. Sycamore St.; 8 rooms; ordinary construction; asbestos roof; hardwood floors; gas heating; construction by owners; cost \$3000.

Ky., Pineville.—F. M. Meadows has plans by R. F. Graf, Knoxville, Tenn., for dwelling; cost about \$5500.

Ky., Williamsburg.—Ed Gatiliff has plans

by R. F. Graf, Knoxville, Tenn., for dwelling; cost about \$7500.

Md., Annapolis.—E. H. Glidden, Garrett Bldg., Baltimore, is preparing plans for dwelling near Annapolis; 40x60 ft.; 2½ stories; cost about \$15,000.

Md., Baltimore.—Newell A. Warner will erect dwelling on Vickers Rd. near Hilton St.; 28x44 ft.; frame; slate roof; hardwood floor; hot-water heat; electric light; also garage, 14x20 ft., 2 stories; cost \$4000; construction by owner.

Md., Baltimore.—Arthur Shields is having plans prepared by John R. Forsythe, 232 St. Paul St., Baltimore, for dwelling at Windsor Hills; 2½ stories; 35x50 ft.; cost about \$6000.

Md., Baltimore.—Robt. A. Fisher is having plans prepared by Bayard Turnbull, 324 Charles St., Baltimore, to remodel and erect addition to dwelling at 1420 Park Ave.; addition 20x50 ft.; frame; thorough interior remodeling.

Md., Baltimore.—Milton Erlanger is having plans prepared by John R. Forsythe, 322 St. Paul St., Baltimore, for dwelling at Windsor Hills; 32x50 ft.; frame.

Md., Baltimore.—Frank Novak Realty Co., 744 N. Kenwood Ave., has plans by Callis & Callis, 2055 Kennedy Ave., Baltimore, for 26 dwellings at 700-24 N. Curley St.; 2 stories; 13x45 ft.; brick; tin roof; furnace heat; cost \$26,000; construction by owner.

Md., Baltimore.—Chas. Hogendorp is having plans prepared by Wm. O. Sparklin and Geo. S. Childs, Law Bldg., Baltimore, for dwelling on Merrymount Rd.; 46x21 ft.; 2½ stories; frame; shingle exterior and roof; hardwood floor; probably hot-water heat; electric light; cost about \$6000; plans ready about July 1. (Lately noted.)

Md., Baltimore.—Globe Realty Co., 32 South St., will erect 4 dwellings at 1202-8 Bloomingdale Rd.; 2 stories; 14x50 ft.; brick; slag roof; steam heat; cost \$10,000; Stanislaus Russell, Archt., 2900 Clifton Ave., Baltimore. (Lately noted to have plans for 13 dwellings on Bloomingdale Rd.)

Md., Bethesda.—Capt. E. R. Heiberg is having plans prepared by C. L. Harding, Woodward Bldg., Washington, D. C., for dwelling in Edgewood; 2 stories; 31x44 ft.; brick; slate roof; hardwood floor; electric light; probably vapor heat; cost about \$8500; subcontracts to be let by Archt. (Lately noted.)

Md., Hagerstown.—Chas. F. Stroie will erect double brick dwelling on Hamilton Blvd.; 2 stories; 37x42 ft.

Md., Hagerstown.—Wellington Kentner will erect 2-story brick dwelling on Ridge Ave.; 34x42 ft.

Miss., Magnolia.—Xavier A. Kramer prepared plans for residence for himself; cost \$5000; wants bids on brick mantels, tile, mill work, lumber, etc. (See Machinery Wanted—Building Material.)

Mo., Kansas City.—G. C. Crow will erect 2-story frame dwelling at 6124 Walnut St.; cost \$3500.

Mo., Kansas City.—Alfred H. Wagner, 515 Commerce Bldg., has plans by H. J. Goddard, Reliance Bldg., Kansas City, to erect residence at 64th St. and Paseo; brick and shingle; shingle roof; oak floors; hot-air or hot-water heat; electric lighting, day labor; construction to begin in July. Address owner or architect. (Lately noted.)

Mo., Kansas City.—Earl Hallar will erect 1-story frame dwelling at 218 W. 62d Ter.; cost \$5500.

Mo., Kansas City.—I. L. Yost will erect 3 dwellings at 3741-43 Highland St.; 1½ stories; frame; cost \$6750.

Mo., Kansas City.—J. H. Wallerstrom will erect 1-story frame dwelling at 7 E. 57th St.; cost \$3000.

Mo., Kansas City.—H. G. Teale will erect 2-story stucco dwelling at 2810 Paseo St.; cost \$4000.

Mo., Kansas City.—W. E. R. Booker will erect 2-story frame dwelling at 3808 Paseo St.; cost \$5000.

Mo., Kansas City.—Lee Agee will erect 2-story frame dwelling at 3901 Roanoke Rd.; cost \$6500.

Mo., Kansas City.—W. C. Seaton will erect 2-story frame dwelling at 3812 Benton Blvd.; cost \$3000.

N. C., Greensboro.—J. E. Kirkman will erect brick-veneer colonial residence; cost \$10,000 to \$20,000.

N. C., Salisbury.—Frank Rankin will erect 2 bungalow on W. Council St.

Okla., Tulsa.—R. F. Morley will erect business building on Cincinnati Ave. between 3d and 4th Sts.; 5 stories; reinforced concrete; cost about \$100,000; is erecting 3-story store and hotel building adjoining at cost of \$30,000. (Previously noted.)

Okla., Tulsa.—Bird McGuire will erect residence in Maple Ridge; brick and stone; cost \$22,000.

Okla., Tulsa.—John Mayo will erect \$12,000 brick-veneer 2-story residence at 14th and Cheyenne Ave.

S. C., Anderson.—Mrs. N. B. Sullivan lets contract in about 2 weeks to erect residence on S. Main St.

S. C., Blacksburg.—J. F. Belue contemplates erecting 2 cottages on Carolina St.; bungalow type.

S. C., Clinton.—Geo. H. Ellis will erect 2-story dwelling to cost about \$3500.

S. C., Clinton.—W. J. Bailey will expend \$3000 to remodel residence.

S. C., New Brookland.—L. S. Trotti has plans by J. H. Sams, Columbia, S. C., for dwelling; 2 stories; 65x65 ft.; brick; tile roof; electric light; construction by owner with day labor. Address owner.

S. C., Paolet.—Paolet Mfg. Co., V. M. Montgomery, Prest., authorized expenditure of \$125,000 for improvements, to include erecting 10 cottages for employes and repairing other cottages, etc.

S. C., Spartanburg.—Mrs. W. B. Veasey will erect 8-room residence on Mills Ave.; cost about \$3000.

Tenn., Athens.—J. C. Reed has plans by R. F. Graf, Knoxville, Tenn., for dwelling; cost \$3000; also remodel dwelling and store; cost about \$1500. (Mr. Reed lately noted to erect 2 cottages.)

Tenn., Jellico.—Sam C. Bairy has plans by R. F. Graf, Knoxville, Tenn., for dwelling; cost about \$3500.

Tenn., Knoxville.—Crystal Coal Co., L. C. Gunter, Prest., will erect 30 to 30 mine houses.

Tenn., Memphis.—S. B. Anderson, Prest. of Anderson-Tully Co., is erecting residence in Morningside Heights.

Tenn., Nashville.—Bransford Realty Co., Inc., First National Bank Bldg., will erect 5-room bungalows and 8-room brick dwellings; mill construction; shingle and metal roof; hardwood floor; hot-air and steam heating systems, \$130 to \$250 each; cost without equipment, \$2500 to \$6000 each. (Lately noted to erect 12 dwellings.)

Tenn., Nashville.—Mrs. C. L. Hayes will erect residence; 2 stories; brick veneer and stucco; contracts for building proper and plumbing, heating and electric wiring let separately; R. F. Graf & Sons, Archts., Knoxville, Tenn.

Tex., Austin.—J. McKeown will erect 2-story dwelling at 202 E. 22d St.; frame; cost \$4000.

Tex., Dallas.—C. M. McNatt, 5306 Tremont St., Dallas, will erect dwelling at 5306 Tremont St.; 2 stories; 8 rooms; ordinary construction; shingle roof; yellow-pine floor; cost \$3000; construction by owner. Address R. H. Clem, Dallas. (Mr. Clem noted in May to erect dwelling.)

Tex., El Paso.—Will P. Brady will erect residence.

Tex., El Paso.—Bondreaux & Hignett will erect brick bungalow; 34x51x20 ft.; cost \$4500.

Tex., Galveston.—E. R. Milroy will erect dwelling at 7th St. and Broadway; 2 stories; frame; brick veneer; cost \$4500.

Tex., Galveston.—E. J. Wood will erect dwelling at 3215 Ave. S; 2 stories; frame; cost \$3000.

Tex., Galveston.—J. E. Pearce will erect residence at 31st St. and Ave. O; tile construction; cost \$3000.

Tex., Holland.—L. B. Mewhenney has plans by H. D. Pampel, Temple, Tex., for dwelling; cost \$8000; owner will sublet all contracts. (Lately noted.)

Tex., Houston.—Mrs. Mary E. Colby will erect 8-room residence, 2-story garage and servants' quarters at Fannin and Arbor Sts.; cost \$3500.

Tex., Kenedy.—J. M. Nichols, Prest. of First State Bank, will erect residence; brick; 14 rooms.

Tex., Mexia.—P. B. Jones is erecting 8-room bungalow.

Tex., San Antonio.—E. G. Walsh will erect 5-room dwelling on Amy Blvd.; cost \$3500.

Tex., San Antonio.—T. T. Tygart will erect 5-room dwelling on W. Mistletoe Ave.; cost \$4500.

Tex., Ysleta.—J. Z. Ross is having plans prepared for residence; cost \$15,000.

Tex., Ysleta.—Joe Lowenstein will erect double 2-story dwelling.

Va., Falls Church.—Speiden & Speiden, 1403 New York Ave., Washington, D. C., are preparing plans for dwelling for client; 2 stories; 29x46 ft.; hollow tile construction; stucco exterior; slate roof; hardwood floor; hot-water heat; electric light; cost about \$8000; plans ready about July 5.

Va., Lynchburg.—L. T. and U. V. Williams will erect double dwelling on Rivermont Ave.; frame; cost about \$5000.

Va., Norfolk.—C. R. Carver will expend \$5098 to alter residence at 39th and Granard Sts.

Va., Petersburg.—Brown Construction Co., Richmond, Va., will erect 8 dwellings at Colonial Heights; frame.

Va., Richmond.—B. H. Lange and Annie M. Jaunsen will erect 2-story brick dwelling at 3319 W. Main St.; cost \$4500.

Va., Richmond.—S. G. Gray will erect 2-story frame dwelling at 1114 Lamb Ave.; cost \$3500.

Va., Richmond.—H. W. Cottrell will erect 2-story brick dwelling on Jefferson Park; cost \$6400.

Va., Richmond.—D. S. Ivey will erect 2-story dwelling at 2 North Boulevard; cost \$7100.

Va., Richmond.—Atlantic Construction Co. will erect 6 two-story attached brick dwellings on Elm St. between Main and Cary Sts.; cost \$25,000.

Va., Richmond.—Louise Hundertmark will erect 2-story brick dwelling on Chamberlayne Ave.; cost \$4970.

Va., Richmond.—L. D. Warren and J. D. Pretlow will erect two-story brick tenement (3 dwellings) on Grace St.; cost \$10,000.

Va., Richmond.—Davis & Archer, 2515 Hanover Ave., will erect dwelling at 3 S. Boulevard; 36x40 ft.; mill construction; tile roof; birch floors; hot-water heat; electric lights; cost \$8500; C. H. Archer, Archt., 2515 Hanover Ave., Richmond; construction by owner, who may be addressed. (Mrs. Eleanor T. Lynemann lately noted to erect this dwelling.)

Va., Roanoke.—C. W. Turner will erect 2-story brick-cased dwelling on 7th St. S. W.; cost \$3000.

Va., Roanoke.—W. L. Giles will erect 2-story brick-cased dwelling on 7th Ave.; cost \$5500.

GOVERNMENT AND STATE

Md., Baltimore.—Immigration Station.—Treasury Dept., Jas. A. Wetmore, Acting Supervising Archt., Washington, D. C., receives bids until Aug. 16 for construction (except mechanical equipment, elevator, lifts and dumbwaiter) of immigration station, including pipe tunnels, approaches and wharf; 1 four-story, 1 three-story and 2 two-story buildings of fireproof construction, with slate, tile and composition roofs; brick faced; stone base; stone and terra-cotta trimmings; approximately 43,000 sq. ft. total ground area; wharf 25x250 ft.; wood construction; drawings and specifications after July 9 from Commr. of Immigration, Baltimore, and from Mr. Wetmore as above.

Tex., Marlin.—Postoffice.—Treasury Dept., Jas. A. Wetmore, Acting Supervising Archt., Washington, D. C., opened bids to erect postoffice; V. E. Taylor, Ennis, Tex., is lowest bidder at \$44,650 for limestone and \$44,750 for sandstone construction; 3450 sq. ft. ground area; brick; stone faced; partly fireproof. (Noted in May.)

HOSPITALS, SANITARIUMS, ETC.

Ky., Lexington.—Fayette County Tuberculosis Assn. purchased land for sanitarium; will probably not begin building for year. (Lately noted.)

Ky., Middlesboro.—Evans Hospital will erect addition to building; brick; 10 rooms.

N. C., Tarboro.—Pittman Sanatorium Incorporated with \$50,000 capital stock; will erect \$15,000 hospital building.

N. C., West Durham.—Dr. R. L. Holloway will erect building for baby sanatorium at Rivermont Farm; accommodations for 25 babies.

Tenn., Chattanooga.—Trustees of Baroness Erlanger Hospital, E. H. Sholar, Prest., receives bids through W. H. Sears, Archt., 821 James Bldg., Chattanooga, to erect 4-story-and-basement brick and reinforced concrete building; plans and specifications at office of W. H. Sears, as above, and J. D. Alsop, Associate Archt., Chattanooga. (Lately noted.)

Va., Radford.—Dr. King of Staunton, Va., acquired old St. Alban's College and is reported to expend \$10,000 to remodel for sanatorium.

W. Va., Weston.—J. S. Lakin, Prest. State Board of Control, Charleston, W. Va., receives bids until July 27 to furnish materials and erect building for congregate dining hall, kitchen, storeroom and cold-storage at Weston State Hospital according to plans by H. Rus Warne, Charleston, W. Va.; 306 ft. 6 in. by 63 ft. 2 in.; 2 stories; brick walls; pressed-brick exterior; salt glazed brick interior; fireproof floors and ceilings; tile and composition floors; metal partitions and Keen cement plaster; slate roof on wood construction; 3 fireproof covered passageways to main building; plans and specifications at office of State Board of Control at Charleston.

HOTELS

Fla., St. Petersburg.—Chas. R. Hall is reported to erect store and hotel building at Central Ave. and 5th St.; 4 stories; 100 ft. frontage on Central Ave.; lower floor for stores; upper floors hotel rooms; walls to support 10 stories.

Okla., Tulsa.—John O. Mitchell will erect 3-story hotel.

Okla., Tulsa.—R. F. Morley is erecting store and hotel building. (See Stores.)

W. Va., Berkeley Springs.—Alexander McNeil, representing Pittsburgh capitalists, is reported to have acquired site and to erect hotel; cost about \$100,000.

W. Va., Fairmont.—Henry Schmulbach, Wheeling, W. Va., will erect store and hotel building; lower floor for stores; upper floors for 100 hotel rooms; cost \$75,000.

MISCELLANEOUS

Ark., Hot Springs.—Bathhouse.—Lowell & Latta have plans by Mann & Stern, Little Rock, for bathhouse on Central Ave.; 100x100 ft.; fireproof; reinforced concrete floor; indirect vapor heat; electric light; cost about \$60,000; bids to be asked in fall. Address architects. (Lately noted.)

Ga., Macon.—Grandstand, etc.—Georgia State Fair Assn., Harry C. Robert, Secy. and Gen. Mgr., will erect grandstand, 45x270 ft., and two swine and cattle sheds, 50x100 ft.; composition roof; may use tin for grandstand; concrete for grandstand, and perhaps concrete floor; other buildings of ordinary construction; cost of grandstand, including usable lumber, \$2500; 2 sheds, with old lumber, \$1500. (Lately noted.)

N. C., Raleigh.—Clubhouse.—Woman's Club has plans by R. F. Smallwood, Newbern, N. C., and 509 5th Ave., New York, N. Y., for clubhouse on Hillsboro St.; 85x100 ft.; mill construction; built-up roof; pine floor; steam heat; electric light; cement sidewalk; cost about \$17,000; construction to begin about July 15. Address Archt., New York office. (Lately noted.)

Okla., Muskogee.—Fair.—Fair Association will expend \$12,900 to beautify grounds and repair buildings.

RAILWAY STATIONS, SHEDS, ETC.

Ala., Bessemer.—Alabama Great Southern R. R., C. Dougherty, Ch. Engr., Cincinnati, will build station on 29th St.; brick; Spanish tile roof; cement floor; cost \$30,000; most of construction by company's force. (Lately noted.)

Ga., Augusta.—Georgia & Florida Ry., D. F. Kirkland, Gen. Mgr., Augusta, will erect station at Twiggs and Calhoun Sts.

Ga., Perry.—Hawkinsville & Western R. R. will not erect station at present. (Lately reported.)

Va., Danville.—Southern Ry. Co., W. H. Wells, Ch. Engr. Constr., Washington, D. C., will remove station from present location to site about 50 ft. distant, erect waiting-room, construct concrete viaduct, tracks, etc.

SCHOOLS

Ala., Bessemer.—School Board opens bids July 7 to erect additions to Clarendon Ave. and Roberts school buildings; cost about \$25,000. (Lately noted.)

Ark., Griffithville.—School Board, J. W. Rhea, Secy., sold \$2500 bonds to erect school building.

Ark., Hampton.—School Board has plans by R. P. Morrison, Little Rock, for school building; sold \$600 bonds. (Previously noted.)

Ark., Houston.—School Board has plans by R. P. Morrison, Little Rock, for school building; sold \$6500 bonds. (Previously noted.)

Ark., Little Rock.—Medical Department of University of Arkansas, Dr. Morgan Smith, Dean, will soon call for bids to repair rooms of medical department in Statehouse, noted

in April as damaged by fire; cost about \$5000; plans by W. N. Gladson, head of faculty of Dept. of Engineering at Fayetteville, Ark.

Ark., Omaha.—Omaha School Dist. voted bonds to erect stone or brick school; cost \$10,000. Address Dist. School Trustees.

Fla., Auburndale.—Board of Public Instruction, Bartow, Fla., receives bids until July 7 to erect school building. (See Fla., Winterhaven.)

Fla., Brooksville.—Hernando County School Board accepted plans by Willis R. Biggers, Tampa, for repairs to high school; bids opened in 2 weeks.

Fla., Clearwater.—Trustees are having plans prepared by Lester Avery, Clearwater, for school; 6 classrooms, library, auditorium, etc.; brick exterior; 61x77 ft. (Special Tax Dist. No. 2 lately noted to have voted \$20,000 bonds.)

Fla., Eagle Lake.—Eagle Lake School Dist. has plans by Willis R. Biggers, Tampa, for school.

Fla., Pensacola.—Board of Public Instruction plans to erect 9-room school in Maxent tract or near Maxent Baseball Park.

Fla., Seabreeze.—Special Tax School Dist. No. 41 voted \$50,000 bonds to erect school and purchase additional grounds; plans by Mark & Sheftall, 210 Clark Bldg., Jacksonville, call for structure 14x70 ft.; fireproof; reinforced concrete throughout; steel sash; 2 stories and basement; auditorium to seat 600; manual training and domestic science equipment, boiler-room, coal and fan rooms, etc., in basement; blast steam heating and ventilating system; piped for vacuum cleaning; 10 classrooms, 3 recitation rooms, laboratories, etc. (Lately noted.)

Fla., Safety Harbor.—School Board, Clearwater, Fla., opened bids to erect 3-story school building to cost about \$10,000; H. B. Rigby, Safety Harbor, is low bidder and will probably receive contract; Lester Avery, Archt., Clearwater. (Lately noted.)

Fla., Seminole.—Board of Education of Pinellas County, Dixie M. Hollis, Secy., Clearwater, Fla., receives bids until July 6 to erect 4-room brick school according to plans and specifications by J. G. Bonniwell & Co., St. Petersburg, Fla.

Fla., Tampa.—Supt. of Public Instruction, Marshall Moore, Secy., receives bids until July 15 to erect Moody Heights school building; plans may be had by applying to Curtis & Adams, Archts., Tampa. (Previously noted.)

Fla., Tampa.—Board of Public Instruction, Marshall Moore, Secy., receives bids until July 19 to erect school at Harlem Academy site on Harrison St.; plans and specifications at office of W. R. Biggers, Archt., Tampa. (Lately noted.)

Fla., Tarpon Springs.—Pinellas County School Comms., Clearwater, Fla., will erect 4-room brick school; bids opened July 6.

Fla., Venus.—Board of Public Instruction of DeSoto County, Arcadia, receives bids until Aug. 2 to erect cement-brick school; drawings and specifications at office of Wm. L. Redditt, Archt., Arcadia, and Supt. of Public Instruction; Jas. O. Bickley, Secy., Arcadia. (Previously noted.)

Fla., Ybor City, Ind. Sta., Tampa.—Board of Public Instruction lets contract July 19 to erect school building 100x140 ft.; ordinary brick construction; firewalls; gravel Barrett specification roof; concrete and wood floors; hot-air heat; electric lights; cost \$40,000; A. L. Shaw, Archt., Tampa. (Lately noted.)

Fla., Winterhaven.—Board of Public Instruction receives bids until July 7 in office of C. A. Parker, Supt., Bartow, Fla., to erect high-school building; 2 stories and basement; about 157x143 ft.; 24 rooms; ordinary brick construction; asbestos roof; cost about \$30,000; W. H. Carr, Archt., Leesburg, Fla.; also receives bids same date to erect school building at Auburndale, Fla.; 70x90 ft.; 2 stories; ordinary construction; Barrett specification roof; cost \$10,000; Fort & Potet, Archts., Lakeland, Fla. (Previously noted.)

Ga., Atlanta.—Board of Education accepted plans by Battle & Barilli, Atlanta, for Meador Goldsmith School; cost about \$9000. (Lately noted.)

Ga., Atlanta.—Thos. J. and Arthur Day have plans by Walker & Chase, Candler Bldg., Atlanta, for building on S. Prior St. to be leased by city for commercial high school; main building 114x63 ft.; auditorium 60x75 ft.; fireproof; tar and gravel roof; roof garden; reinforced concrete floor; \$5000 steam heat; \$1500 electric light; concrete sidewalk; elevators; cost \$50,000; construction by owners with day labor; subcontracts to be let for grading, concrete frame and footings, wiring, heating, plumbing, brick-

work, roofing, millwork. Address Archts. (Lately noted.)

Ga., Cartersville.—City votes July 17 on \$5000 bonds for schools; G. W. Young, Mayor.

Ga., Chatsworth.—Chatsworth School Dist., E. R. Glenn, Chrmn., will erect school; ordinary construction; probably metal roof; wood floor; details not decided; Archt. not employed; lately noted to vote bonds. Address Mr. Glenn.

Ga., Savannah.—Chatham county votes latter part of August on \$60,000 bonds for schools. Address County Comms.

Ky., Carlisle.—City voted \$15,000 bonds to erect school. Address The Mayor.

Ky., Lexington.—Board of Education lets contract July 8 to erect Forest Hill colored school; brick; stone trimmings; 2 stories; auditorium to seat 400 students; cost \$12,000; Anderson & Frankel, Archts., Lexington. (Previously noted.)

Ky., Mt. Sterling.—George V. Sled, County Supt., will erect brick school at Camargo; bids opened June 26.

La., Bogalusa.—City contemplates election on \$200,000 bonds to erect school, purchase present schools, etc. Address The Mayor. (See Water-works.)

La., Shreveport.—Summer Grove School Dist. voted \$6000 bonds to erect school. Address Dist. School Trustees.

Miss., Clarksdale.—City voted \$150,000 bonds to erect school, etc. Address The Mayor. (See Water-works.)

Miss., Ripley.—City has plans by Overstreet & Spencer, Jackson, Miss., for school; 2 stories; brick; receives bids through L. H. Jobe, Clerk Building Com., until July 10.

Mo., St. Joseph.—School Board, J. J. Young, Secy., will erect Hosea school at cost of \$60,000, according to plans by Eckel & Aldrich, Forsee-Corby Bldg., St. Joseph; also having plans prepared by Walter Boschen, Tottle-Lemond Bldg., St. Joseph, for school at S. 12th St.; cost \$45,000.

Mo., Warrensburg.—C. E. Hoover, Registrar of Missouri State Normal School, receives bids until July 7 to erect science hall; separate bids for heating and plumbing system and electric wiring; plans and specifications at office of Registrar as above and Smith, Rea & Lovitt, Archts., Finance Bldg., Kansas City. (Previously noted.)

N. C., Gastonia.—City voted \$100,000 bonds for schools; will expend \$40,000 to finish Central School building and \$30,000 each to erect schools at each end of city; C. H. Armstrong, Mayor.

Okla., Berwyn.—City will receive bids July 3 for erection of school; C. E. Hair & Co., Archts., Oklahoma City, Okla.

Okla., Tulsa.—Board of Education receives bids addressed to A. A. Bumgarner, Chrmn. of Building Com., until July 2 to erect additional buildings on Irving St. School site; plans and specifications at office of MacDonald & Eichenfeld, Archts., 510 Robinson Bldg., Tulsa; Board also receives bids at same time to remodel Sequoyah School and construct retaining wall; plans and specifications at office of J. P. Curtin, Archt., Room 14 Hayward Bldg., Tulsa.

S. C., Bethune.—School Board, J. H. Stone, Clerk, will erect school at King and Church Sts.; 60x35 ft.; 8 rooms; ordinary construction; metal roof; wood floors; \$600 to \$800 steam heat; electric light; cost \$8500. Address Clerk of Board. (Lately noted to have voted bonds.)

S. C., Berea.—City voted \$3500 bonds to erect school. Address The Mayor.

S. C., Bluffton.—City voted bonds to erect school. Address Mr. Riser, Supt. of Schools.

S. C., Hemingway.—Trustees, J. M. Eaddy, Chrmn., receive bids until July 1 to erect school; 103x53 ft.; auditorium 61x43 ft.; ordinary construction; Barrett Specification roof; wood floor; cost about \$15,000; plans and specifications at office of Jas. D. Benson, Archt., Charleston, S. C., and Mr. Eaddy at Hemingway. (Lately noted.)

S. C., Sumter.—Board of Education is having plans prepared by N. Gaillard Walker, Rock Hill, S. C., and J. H. Johnson, Associate Archt., Sumter, for girls' high school; about 65x120 ft.; ordinary brick and tile construction; tin and slate roof; fan-blast system of heating and ventilating; electric lighting; cost \$28,000; bids opened in Aug.; heating and ventilating equipment to cost about \$5000. Address Archt. (Lately noted.)

Tenn., Dunlap.—Sequatchie County School Board will erect school on mountain in second district.

Tenn., Knoxville.—City plans to issue \$15,000 bonds to erect addition to Park City High School. Address The Mayor. (Lately noted.)

Tenn., Knoxville.—D. G. Leahy, City Recorder, receives competitive plans from local architects until July 3 for Glenwood Ave. School; 6 to 8 rooms (preferably 8); red pressed brick; marble trimmings; steam heat; cost not to exceed \$30,000. (Lately noted.)

Tex., Burton.—Burton School Dist. No. 22 voted bonds to erect \$10,000 school. Address Dist. School Trustees. (Lately noted.)

Tex., Ennis.—Trustees receive bids until July 3 to erect 2-story-and-basement brick school; separate bids at same time for mechanical equipment, including heating, ventilating, plumbing, wiring and desks; plans and specifications at office of Sanguinet & Staats, Archts., Fort Worth, Tex.

Tex., Fort Worth.—Polytechnic Y. M. B. I. plans to construct \$45,000 high school; L. H. Tandy, Chrmn. of Building Com.

Tex., Gatesville.—State Juvenile Training School will erect cottage; 10 rooms; construction by student labor; cost about \$3000.

Tex., Hawkins.—Jarvis Christian Institute, J. N. Erwin, Prest., has plans by Van Slyke & Woodruff, Fort Worth, for negro dormitory and chapel; 93x37.6 ft. with L. 69x37.6 ft.; ordinary construction; wood floor; steam heat; cost \$10,000; contract let about July 1. Address Prest. Erwin. (Lately noted.)

Tex., Lott.—School Board has plans by Edw. H. Reed, 1903 Amicable Bldg., Waco, Tex., for school building; 50x70 ft.; ordinary construction; red rubberoid roofing; cost \$5000; heating, \$600; lighting, \$300; bids opened June 30. Address architect or J. L. Zarrazin, Waco.

Tex., Moore.—Moore School Dist. is considering election on \$10,500 bonds for school improvements. Address Dist. School Trus.

Tex., Nixon.—School Dist. will vote on \$15,000 bond issue to erect school building. Address Board of Education.

Tex., Orange.—Common School Dist. No. 1 of Orange County votes July 10 on \$8000 bonds to erect brick school; D. C. Bland, County Judge.

Tex., Palestine.—City votes July 2 on \$100,000 bonds to erect schools. Geo. A. Wright, Mayor. (Lately noted.)

Tex., Texarkana.—Liberty School Dist. No. 12 will erect high school, for which \$10,000 bonds were lately noted voted; 2 stories; brick; domestic science and manual training equipment; metal ceilings; Johns Manville 3-ply built-up roofing.

Tex., Ysleta.—Ysleta School Dist. has plans by Miss Gertrude Attaway, El Paso, for school; 2 stories and basement; gravel roof; steam heat; electric wiring; cost \$15,000; also erect two schools to cost \$1000 each. (Lately noted.)

Va., Abingdon.—Stonewall Jackson College, Rev. W. M. Hunter, financial agent, Williamsburg, Va., inaugurated campaign for \$250,000 to acquire site and rebuild structures; R. H. Hunt, Chattanooga, Tenn., submitted plans; cost of buildings about \$125,000. Address T. P. Trigg, Abingdon.

Va., Norfolk.—School Board, Paul-Gale-Greenwood Bldg., Richard A. Dobie, Div. Supt., receives bids until July 2 to erect annex to and alter Matthew Fontaine Maury High School; plans and specifications at office of Neff & Thompson, Archts., Seaboard Bank Bldg., Norfolk; has \$18,000 appropriation; extension to consist of 2 buildings, each about 68x66 ft.; fireproof; Barrett roof; concrete and wood floors; steam heat (not in general contract); concrete sidewalk; cost \$10,000; alterations will consist of tearing out partitions; replace floors; install doors, etc., to cost \$1500. (Lately noted.)

Va., Charlottesville.—Pi Kappa Alpha Fraternity of University of Virginia has plans by Ferguson, Calrow & Taylor, Norfolk, for athletic clubhouse in connection with stadium; Jeffersonian colonial type; brick; 170x60 ft.; trophy-room 50x30 ft.; 2 stories; tile roof; concrete and wood floors; bids opened June 17; swimming pool 60x30 ft.; cost \$25,000. (Lately noted.)

Va., Danville.—Trustees will erect schools in North and South Danville; has plans for Stonewall Jackson School in North Danville by Pritchett & Henderson, Dudley Block, Danville; 118x106 ft.; mill construction; Barrett specification roof; cost \$30,000; heating \$5000; bids opened about July 15. (Lately noted.)

Va., Lexington.—Virginia Military Institute adopted tentative plans by Bertram G. Goodhue, 2 W. 47th St., New York, for Jackson Memorial Hall; 65x120 ft.; auditorium to seat 1415; at each end of gymnasium will be gallery 14½x65 ft.; cost \$80,000. (Previously noted.)

W. Va., Shepherdstown.—State Board of Control, Charleston, W. Va., authorized T. C. Miller, Prest. of Shepherd College, to erect \$26,000 dormitory.

W. Va., Moundsville.—Miller Bros. have plans by Thos. Shimp for school on Ash Ave.; 28x34 ft.; cement block construction; slate roof; hot-air heat.

W. Va., Shenandoah Junction.—Board of Education of Charles Town Dist., Charles Town, will erect school.

STORES

Ala., Anniston.—Anniston Lodge No. 443, A. F. and A. M., will erect store, office and lodge building. (See Association and Fraternal.)

Ala., Birmingham.—L. M. Smith will erect 2-story brick-veneer building; cost \$4000.

Ala., Dadeville.—Mrs. Elizabeth Smith is having plans prepared by Jas. R. Hall, Dadeville, to rebuild burned structure; 50x90 ft.; 2 stories; ordinary construction; metal roof; pine floor and joists; heating and lighting not decided; cost \$5000; date of opening bids not determined.

Fla., Burk Burnett.—D. P. McCracken, M. Dodson and Watkins & Hardin will erect buildings to replace structures lately damaged by fire; frontage of about 25 ft. each; depth 70 to 100 ft.

Fla., Orlando.—Dr. J. N. McElroy will erect 2 business buildings; 63x75 ft.; upper floor of 1 structure for offices, other for apartments.

Fla., St. Petersburg.—Chas. R. Hall is reported to erect store and hotel building. (See Hotels.)

Fla., West Palm Beach.—J. L. Dalle, Miami, will erect business building; 3 or 4 stories; lower floor for stores; upper floors for offices.

Ga., Atlanta.—Ben J. and Levi Massell will erect business building on S. Forsyth St. near Peters St.; 2 stories; pressed brick; stone front; cost \$12,500.

Ga., Atlanta.—Mrs. Mary G. Thurman has plans by Morgan & Dillon, Atlanta, for store building at 70-2 Whitehall St.; 3 stories; about 34x140 ft.; ordinary construction; gravel roof; steam heat; electric light; electric elevator; bids opened July 8. (Lately noted.)

Ga., Macon.—Burden, Smith & Co. will expend \$5000 to remodel front and improve interior of store building; Alexander Blair, Archt., Macon.

Ga., Savannah.—Wm. Kollus will erect three-story brick business building.

Ga., Valdosta.—A. B. Walton will erect 2-story store building.

Ky., Lexington.—A. C. and C. S. Brent will erect store building at Limestone and Church Sts.

Mo., Kansas City.—E. J. Landon will erect 2-story brick business building at 1201-35 E. 18th St.; cost \$9000.

Mo., Kansas City.—Ridge Estate Co. will erect store and office building. (See Bank and Office.)

Mo., Kansas City.—J. C. Wolcott of Wolcott, Beers & Grant will erect building at 14th and Main Sts.

Mo., Kansas City.—Lynn S. Banks will alter and erect 2 additional stories to building at 17th and McGee Sts.; cost \$29,000.

Mo., Marcelline.—I. O. F. W. E. Parks, Secy., receives bids until July 12 to erect store and lodge building. (See Association and Fraternal.)

N. C., Ayden.—J. J. Edwards & Son have plans by Benton & Moore, Wilson, N. C., for store building; 3 stories; 30x75 ft.; composition roof; steam heat; hand-power elevator; cost \$10,000.

Okla., Tulsa.—W. O. Bohnfeld will erect 2-story business block.

S. C., Blacksburg.—Wm. Whisonant and E. O. Turner will erect business building on Shelby St.; 41x70 ft.

S. C., Blacksburg.—Chas. Baber will erect business building on Shelby St.; 33x90 ft.

S. C., Blacksburg.—Allie Osborne will erect business building on Shelby St., near Cherokee; 39x70 ft.

S. C., Greenville.—Gillfillin & Houston will erect store and apartment-house. (See Apartment-Houses.)

Tenn., Athens.—J. C. Reed has plans to erect dwelling and remodel store and dwelling. (See Dwellings.)

Tenn., Lebanon.—J. R. Horn will erect brick store building.

Tenn., Lebanon.—A. F. & A. M. will, it is reported, erect business, office and lodge building. (See Association and Fraternal.)

Tenn., Maryville.—Albert B. Baumann, 713 Henson Bldg., Knoxville, Tenn., is preparing plans for store and office building at Main and College Sts.; 43x90 ft.; 2 stories and basement; ordinary construction; maple floor; gravel roof; steam heat; electric lighting; cement sidewalk; cost \$10,000; bids opened July 15.

Tex., Beaumont.—B. Deutser will erect 3-story business building at Pearl St. and Broadway; brick.

Tex., Beaumont.—E. T. Barden, Prest. of Barden Electric & Machinery Co., Houston, will erect building at Wall and Pearl Sts.; 3 stories; brick; lower floor for business purposes; upper floors, apartments.

Tex., El Paso.—J. S. Lanier will erect business building on N. Stanton St.; 4 stories; will be occupied by T. H. Rogers.

Tex., El Paso.—Dr. Hugh W. Crouse and others plan to erect building for stores, etc. (See Bank and Office.)

Tex., San Antonio.—Frank Wash will alter front of building on Military Plaza; cost \$3000.

Tex., Ysleta.—G. S. Hill will erect store at Harris Ave. and County Rd.

Tex., Ysleta.—L. A. Foix will erect building adjoining present store.

Va., Pennington Gap.—Fletcher & Witt will erect business block; 3 stories; 76x92 ft.; W. F. Baker, Archt., Big Stone Gap, Va.

Va., Richmond.—Miller & Rhoads, Inc., have plans by Chas. M. Robinson, Inc., Times-Dispatch Bldg., Richmond, for department store building at Grace and 6th Sts.; W. L. Ragland, Merchants' National Bank Bldg., Richmond, is taking subbids and invites communications from subcontractors, material and equipment firms. (See Machinery Wanted—Building Material.)

W. Va., Beckley.—Ewart Realty Co. Incorporated; acquired site on Main St. and will erect 2 business buildings; 2 stories; brick; let contract for excavation to Croser & Freeman.

W. Va., Fairmont.—Henry Schmulbach, Wheeling, W. Va., will erect store and hotel building. (See Hotels.)

W. Va., Huntington.—Central Realty Co. will improve building at 4th Ave. and 10th St.; fireproof; glass roof; tile floor; heating and lighting installed; change location of elevators; cost \$6000; V. T. Ritter, Archt., Huntington; begins construction July 15. Address owner.

THEATERS

La., Monroe.—Saenger Amusement Co., Shreveport, La., purchased Lyceum Theater and will rebuild; increase seating capacity to 1000, install pipe organ, etc.; cost \$30,000.

Md., Baltimore.—Kay-Bee Amusement Co. is having plans prepared by F. E. Beall, 396 St. Paul St., Baltimore, for motion-picture theater on Monument St. near Bond St.; 45x55 ft.; brick; cost about \$6000.

Md., Baltimore.—Lord Calvert Theaters Co., 701 Calvert Bldg., opens bids about July 1 to erect theater at Baker St. and Fulton Ave.; 37.6x142.6 ft.; fireproof; Master cement floor; cost about \$12,000; F. E. Torrey, Archt., 513 Newington Ave., Baltimore. Address owner. (Lately noted.)

Okla., Drumright.—Street & McFall, Oklahoma City, will erect 2-story brick theater.

Tex., Beaumont.—C. N. Blanchette and Lynn Gilbert are having plans prepared by C. D. Hill & Co., Galveston, for motion-picture and vaudeville theater and office building in 500 block Pearl St.; 60x145 ft.; fireproof; cost \$40,000 to \$50,000. (Noted in May.)

WAREHOUSES

Ala., Huntsville.—Farmers' Warehouse Co. opens bids July 6 to erect cotton storing and handling building; 125x168 ft. and 24x258 ft.; Carey roof; 2-in. oak floor; cost about \$5000; Edgar L. Love, Archt., Huntsville. Address owner. (Lately noted.)

Fla., Sarasota.—W. J. Colton and R. V. Goodwin, Tarpon Springs, Fla., will erect warehouse and lumber-yard on 6-acre tract.

Fla., St. Petersburg.—Wayne Stanley will erect warehouse; frontage 80 ft.

Fla., St. Petersburg.—St. Petersburg Investment Co. will erect warehouse for storage of machinery; completion in 10 days; 60x80 ft.; 25 ft. high.

Ga., Chickamauga.—Crystal Spring Bleachery Co. will erect addition to warehouse. (See Textile Mills.)

Ga., Macon.—Macon Bonded Warehouse will erect additional compartments to warehouse.

Md., Baltimore.—Hochschild, Kohn & Co.,

Lexington and Howard Sts., has bids to erect addition to building at Clay St. and Kimmel alley; 60x70 ft.; cost about \$20,000; Jos. Evans Sperry, Archt., 409 Calvert Bldg., Baltimore.

Mo., St. Louis.—Hafner Mfg. Co. has plans for warehouse at Main and Dock Sts.; 164x200 ft.; mill construction; composition roof; 3-in. yellow pine flooring; cost \$50,000; company will employ superintendent and erect building under own supervision; is

securing prices on materials. (Noted in May.)

Tenn., Nashville.—Mrs. Donna Clarke will erect warehouse on 4th Ave.

Tex., Houston.—Merchants' Compress Co. is reported to erect cotton-storage sheds at Harrison and Wilson Sts.; cost \$10,000.

Tex., Brenham.—D. C. Giddings of Giddings & Giddings, H. F. Hohlt, Prest. of First National Bank, and others are promoting erection of cotton warehouses.

BUILDING CONTRACTS AWARDED

APARTMENT-HOUSES

D. C., Washington.—P. K. Chaconas let contract to John H. Nolan Construction Co., Munsey Bldg., Washington, to erect apartment-house at 1213 19th St.; 25.8x58.6 ft.; 2 stories; brick; slate and slag roof; steam heat; electric lights; cost \$7000; F. H. White, Archt., 502 Real Estate Trust Bldg., Washington.

Ga., Atlanta.—Ralph Peters Black let contract to Gude & Co., Atlanta, to erect apartment-house at Peachtree and 4th Sts.; 3 stories and basement; 30 suites; sleeping porches and glass-enclosed living porches; tile roof; white brick and terra-cotta or limestone; cost \$60,000 to \$70,000; completion by Oct. 1; C. E. Frazier, Archt., Atlanta.

Ga., Atlanta.—L. L. Knight has plans by and let contract to H. W. Nicholes & Son, Atlanta, to erect apartment-house at 476-78-80 N. Jackson St.; 2 stories; 100x60 ft.; brick veneer; gravel roof; hardwood floors; \$2000 steam-heating plant; cost \$28,000; also remodel 2 residences for apartments at cost of \$12,000. (Lately noted.)

Ga., Atlanta.—Mrs. W. A. Niall let contract to Fulton County Home Builders to remodel apartment-house at 94 N. Moreland St.; cost \$7500.

Md., Baltimore.—Suburban Apartment Co. has plans by and let contract to G. R. Morris, 45 Gunther Bldg., Baltimore, to erect apartment-house at 2401 Garrison Ave.; 2 stories; 42x90 ft.; brick; slag roof; steam heat; cost \$16,500.

Mo., St. Louis.—F. Deidericks let contract to J. Rupp & Bro. Co., St. Louis, to erect 2-story flat at 1217 Clara St.; cost \$4800.

Va., Norfolk.—H. I. Britton let contract to John W. Saunders, Norfolk, to erect apartment-house on Lewellyn Ave.; 2 stories; frame; 2 apartments; cost \$3300.

ASSOCIATION AND FRATERNAL

D. C., Washington.—Masonic Hall Building Association of District of Columbia, Inc., let contract to W. A. Kimmel, 511 Evans Bldg., Washington, to erect fraternal and business building at 10th and U Sts. N. W.; 94x134 ft.; 5 stories and cellar; fireproof; slag roof; floors of concrete with wood finish; corridors, terrazzo; vapor system of heating; electric lighting; 2 electric high-speed elevators; cost \$185,000; N. T. Haller, Archt., 10th and G Sts. N. W., Washington; construction to begin Aug. 1. Address contractor. (Lately noted.)

Fla., Boca Grande.—F. G. and Ira Thompson let contract to erect lodge and store building. (See Stores.)

Tenn., Nashville.—M. T. Mallon let contract to convert apartment into lodge hall; Harry J. Frahn, Archt., Nashville.

BANK AND OFFICE

Ark., Monticello.—Citizens' Bank let contract to F. W. Johnson, Box 531, Monticello, to erect building; bank, first floor; second floor, offices; 42x52 ft.; 2 stories; press brick; terra-cotta trimmings; tar and gravel roof; tile and wood floors; cost, without equipment, \$20,000; vacuum steam heat, \$1500; Rittenberry & Parker, Archts., Port Arthur, Tex.; material purchased. (Lately noted.)

Ark., Russellville.—R. L. Jenkins let contract to erect building to be leased to Pope County Bank. (See Stores.)

N. C., High Point.—Mrs. Sarah E. Jones let contract to erect store and office building. (See Stores.)

N. C., Rutherfordton.—Citizens' Banking & Trust Co. let contract to J. W. Campbell, Charlotte, N. C., to erect bank building; 30x80 ft.; Cherryville brick with terra-cotta front; Hook & Rogers, Archts., Charlotte, N. C. (Lately noted.)

N. C., Salisbury.—Wachovia Bank & Trust Co. let contract to J. D. Kennerly to remodel bank building at Main and Council Sts.; J. E. Crane, Archt. (Lately noted.)

Okla., Sapulpa.—Fred Wilkining let con-

tract to Thomas Mace to erect office building for Sapulpa Electric Co. on Park St.; 27x100 ft.; brick; tar and gravel roof; gas heat; electric light; cost \$5000; Wm. Griffith, Archt., Sapulpa.

Tex., Dalhart.—First National Bank let contract to R. F. Matthews, Dalhart, to erect bank building; 25x140 ft.; 1 story; fireproof; asbestos roof; tile and oak floors; steam heat from independent plant; electric light; cost \$7500; O. J. McKnight, Archt., Dalhart; lately noted. Address W. N. Stone, Prest. (See Machinery Wanted—Bank Equipment, Lighting Fixtures, Heating Equipment.)

Tex., Waco.—Southern Union Life Insurance Co. let contract to remodel store and office building. (See Stores.)

CHURCHES

Fla., Atoka.—M. E. Church South, J. H. Humphrey, Chrmn. of Building Com., let contract to A. H. Mays, Atoka, to erect building; 62x79 ft.; mill construction; composition roof; wood joist and floors; steam heat; electric lighting; cost \$10,000; J. O. Parr, Archt., Security Bldg., Oklahoma City. Address Contr. or Mr. Humphrey. (Lately noted.)

Fla., St. Augustine.—St. Benedict's Roman Catholic Church (colored) let contract to Lewis Leonard, St. Augustine, to erect rectory; 2 stories; brick.

Ga., Columbus.—First Baptist Church (colored) let contract to T. U. Butts, Columbus, to supply material to erect building; church to pay for labor; lately noted to be about 72x96 ft.; ordinary construction; metal roof; wood floor; heating undecided, probably hot air; electric light; cost \$18,000 to \$20,000; F. Ray Duncan, Archt., Columbus, Ga.

Md., Baltimore.—St. Luke's Reformed Church let contract to C. C. Watts, 113 W. Hamilton St., Baltimore, to erect building at Baltimore and Pulaski Sts.; 2 stories; 51x80 ft.; stone; slate roof; hot-water heat; cost \$25,000; J. E. Laferty, Archt., 11 E. Pleasant St., Baltimore. (Noted in April.)

Miss., Gulfport.—Baptist church, Rev. Dr. Gillon, pastor in charge, let contract to Chevally & Fursden, Gulfport, to resume construction of building.

CITY AND COUNTY

Miss., Wiggins.—Town Hall.—City let contract to W. R. Dale, Wiggins, to erect town hall and jail; 30x50 ft.; brick; composition roof; cement floor; cost \$2500; R. E. Lee, Archt., Hattiesburg, Miss. (Lately noted.)

N. C., Danbury.—Home.—Stokes County Comms. let contract to E. W. Fowler to erect county home; 100x72 ft.; 2 stories and basement; steam heat; acetylene-gas lighting; hot and cold water; cost \$18,000; Joel R. Hill, Archt., Winston-Salem, N. C.; rough lumber to be supplied by Johnson & Mathews. (Noted in May.)

W. Va., Parkersburg.—Poorhouse.—Wood county let contract to Joe Hill, Parkersburg, to erect poorhouse; 120x70 ft.; ordinary construction; slate roof; wood floors; vapor steam heat; storage-battery lighting system; cost \$26,000; Theo. T. Sansbury, architect, Citizens' Bank Bldg., Parkersburg. (Lately noted under Hospitals.)

DWELLINGS

D. C., Washington.—Henry F. Lippett let contract to C. A. Langley, 310 12th St. N. W., Washington, to remodel dwelling at 1739 N. St. N. W.; 1-story addition; 11x29 ft.; fireproof; interior remodeling; cost \$3600; Boul & Brown, Archts., 1725 H. St. N. W., Washington.

D. C., Washington.—P. W. Calfee and Will Holmes let contract to E. N. Hamilton, 502 Park Rd., Washington, to erect dwelling at 1428 Montague St.; 27x33 ft.; frame; slate roof; hot-water heat; electric light; cost \$4500; plans by contractor.

D. C., Washington.—Dr. J. R. Verbycke, Jr., let contract to F. D. Klimkewicz, 132

12th St. N. E., Washington, to erect dwelling at 3515 Wisconsin Ave. N. W.; 36x28 ft.; frame; shingle roof; hot-water heat; electric light; cost \$5000; W. R. Talbott, Archt., 1314 F St. N. W., Washington.

D. C., Washington.—Geo. Henry Dawson let contract to Geo. W. Turner, 41 Massachusetts Ave. N. W., Washington, to erect dwelling on Woody Rd. near Kilgore Rd.; 26x45 ft.; 2 stories; brick; slate roof; hot-water heat; electric light; cost \$6797; Macneil & Macneil, Archts., Union Trust Bldg., Washington. (Lately noted.)

D. C., Washington.—Geo. G. Cornwell let contract to Geo. N. Ray to erect dwelling at 1919 23d St. N. W.; 4 stories; 19.3x69 ft.; brick and stone; tin and slag roof; vapor heat; electric light; cost \$7500; plans by contractor.

D. C., Washington.—Kate V. Daly let contract to W. L. Turner and Geo. W. Turner, 41 Massachusetts Ave. N. W., Washington, to erect dwellings at 16th and Meridian Sts. N. W.; 3 stories and basement; tile roof; cost \$10,000; A. B. Mullett & Co., Archts., Union Trust Bldg., Washington. (Lately noted.)

Ga., Atlanta.—Ewell Gay let contract to Kalb & McCauley, Peters Bldg., Atlanta, to erect residence on E. 17th St.; 9 rooms with hall; ordinary construction; slate roof; heating plant to be placed in fall; cost \$6000; A. Ten Eyck Brown, Archt., Atlanta; also let contract to Loftis Plumbing Co., Atlanta, for plumbing at \$55. Address general contractor.

Ga., Atlanta.—H. B. Wey let contract to C. B. Meyers Construction Co., Atlanta, to erect frame dwelling at 218 Waverly Way; cost \$3800; 37x46 ft.; ordinary construction; shingle roof; wood floors; hot-air heat; electric lighting; E. C. Wachendorf, Archt., Atlanta.

Ga., Lagrange.—Southern Manufacturing Co., Gadsden, Ala., is reported to have contract to supply material for erection of 125 cottages for Hillside Cotton Mills.

Ga., Moultrie.—R. T. Persons let contract to G. C. Hall, Moultrie, to erect 2 bungalows; plumbing and heating contracts not let. Address Contr.

Ga., Tifton.—B. Y. Wallace let contract to V. C. Parker & Sons, Waycross, Ga., to erect residence at College Ave. and 6th St.; 2 stories; 9 rooms.

Ky., Louisville.—Chas. Strohman let contract to Claude Yates, 833 S. 22d St. Louisville, to erect dwelling at 682 Cecil Ave.; 30x48 ft.; brick veneer; Cortwright tin shingles; hardwood floor; pine on second floor; cost \$4000; heating \$200; T. N. Williams, Archt., 3722 W. Broadway, Louisville. Address Contr.

Md., Baltimore.—Thos. J. Hilliard let contract to erect dwelling and store. (See Stores.)

Md., Baltimore.—Wm. L. Hillyer let contract to C. A. Langley, 1310 12th St., Washington, to erect dwelling on Quincy St.; 75x33 ft.; brick; slate roof; Kelsey hot-air heat; electric light; cost \$16,993; John M. Donn, Archt., 1516 H St., Washington. (Lately noted.)

Md., Catonsville.—Harry Martin Lettich let contract to Chas. and Louis Miske, 232 N. Chester St., Baltimore, to erect dwelling on Beaumont Ave. near Edmondson Ave.; 32x40 ft.; 2½ stories; hollow tile construction; stucco exterior; slate roof; edge grain floor; hot-water heat and electric light separate.

Md., Cumberland.—William Low let contract to Melvin M. Ward and Silas Duggan, Cumberland, to erect residence; white enamel brick.

Md., Roland Park.—A. D. Sheppard let contract to Roland Park Co., Roland Park, to erect dwelling on Deepdene Rd.; 2½ stories; 26x45 ft.; frame; shingle exterior and roof; hardwood floor; hot-water heat; electric light; cost about \$6000; Edw. L. Palmer, Jr., Archt., 408 Roland Ave., Roland Park.

Mo., Kansas City.—Dr. O. L. Castle, 2415 Linwood Blvd., has plans by and let contract to C. R. Munger, 929 Michigan Ave., Kansas City, to erect residence 40x42 ft.; 10 rooms, with garage; ordinary and mill construction; red shingle cedar roof; oak floor; city lighting; cost \$8500; hot-water heat, \$850. Address owner. (Lately noted.)

N. C., Asheville.—Charles A. Webb let contract to Merchant & Boyles, Asheville, to erect residence; 2 stories; steam heat; hardwood floors; colonial design; cost \$15,000; W. C. Northrup, Archt., Winston-Salem, N. C.

N. C., Winston-Salem.—W. C. Huband let contract to E. B. Newkirk & Co., Winston-Salem, to erect residence; 2 stories; shingle roof; frame; city water, gas, electric light and sewer connection; cost \$3000.

S. C., Anderson.—J. C. Latimer let contract to erect residence.

S. C., Anderson.—Equinox Mill let contract Builders' Lumber & Supply Co., Williamston, S. C., to build 25 cottages; cost about \$15,000. (Lately noted.)

S. C., Charleston.—Dr. G. McF. Mood, 19 Colonial St., let contract to W. H. Smith, 57 South St., Charleston, to erect residence at 3 Kenilworth Ave. (Hampton Park Terrace); 32x54 ft.; mill construction; tin roof; quarter-sawn pine floors; cost \$5500; Williamson underfed water heat, \$500; electric lighting, \$140; plans by owner.

S. C., Charleston.—Leo P. L. Murphy let contract to T. J. Sheridan, 103 Cannon St., Charleston, to erect dwelling at 71 Charlotte St.; 32x52 ft.; ordinary construction; tin roof; pine floor; cost \$4500; construction begun; private plans. Address Contr.

S. C., Columbia.—W. D. Simpson & Taylor and M. H. Bowen let contract to erect dwelling and store building. (See Stores.)

Tenn., Nashville.—Richard S. Plater let contract to W. F. Holt, Nashville, to erect residence; 2 stories; frame; shingle roof; cost about \$25,000; Russell E. Hart, Archt., Nashville. (Previously noted.)

Tenn., Nashville.—A. J. Hullebrand let contract to H. P. Jacobs, Nashville, to erect residence; Geo. D. Waller, Archt., Nashville.

Tex., Austin.—K. C. Miller let contract to Culley & Blackmore, Austin, to erect 2 dwellings on Wichita St.; ordinary construction; shingle roof; hot-air heat; electric light; cost \$6500; Edw. C. Kreisler, Archt., Austin. (Lately noted.)

Tex., Fort Worth.—W. R. Edrington let contract to Butcher & Sweeney, Fort Worth, to erect residence; 2 stories; 7 rooms; brick veneer; cost \$10,000.

Tex., Galveston.—Fred Warner, Texas City, Tex., let contract to erect 3 bungalows at 18th and N½ Sts.; cost \$5000.

Tex., Galveston.—Hans Guldman let contract to Heath & Holmes, 3510 Ave. S., Galveston, to erect dwelling on 35th St. between O and O½ Sts.; 2 stories; fireproof; Spanish tile roof; concrete floor; cost \$30,000; L. S. Green, Archt., Galveston. (Lately noted.)

Tex., San Antonio.—D. W. Gregory, 108 De Vellos St., let contract to Pasqual Faiba, 107 Morales St., San Antonio, to erect dwelling at 426 10th St.; 36x60 ft.; ordinary construction; metal roof; city light; cost \$3500; W. N. Hagy, Archt., 401 Frost Bldg., San Antonio. Address owner. (Lately noted.)

Va., Clintwood.—W. W. Pressley has plans by and let contract to Hunkcutt & Crawford, Norton, Va., to erect dwelling on Main St.; 38x40 ft.; brick; asbestos roof; oak floor; concrete sidewalk; cost \$5000. (Lately noted.)

Va., Norfolk.—S. L. McGonigal let contract to Griffin Bros., Norfolk, to erect residence on 37th St.; 2 stories; brick and shingle; 24x36 ft.; 6 rooms and bath; ordinary construction; slate roof; hot-water heat; sub-contracts let.

Va., Norfolk.—Eugene Moore let contract to Griffin Bros., Norfolk, to erect frame residence; cost \$3500. (Lately noted.)

Va., Norfolk.—Mrs. S. M. Bedler let contract to Griffin Bros., Norfolk, to erect 2-story frame residence; cost \$3000.

Va., Norfolk.—Chas. R. Robertson let contract to Atkinson Building Co., Norfolk, to erect dwelling on 34th St.; 30x54.4 ft.; ordinary construction; No. 1 Buckingham slate roof; wood and tile floor; Richardson vapor-vacuum heat; electric light; cost \$6000; Chas. M. Major, Archt., Portsmouth, Va. Address contractor. (Lately noted.)

Va., Norfolk.—C. E. Stephenson let contract to Atkinson Building Co., Norfolk, to erect dwelling on 34th St.; 29.6x47 ft.; ordinary construction; No. 1 Buckingham slate roof; wood and tile floor; Richardson vapor-vacuum heat; electric light; cost \$4000; Chas. M. Major, Archt., Portsmouth, Va. Address contractor. (Lately noted.)

GOVERNMENT AND STATE

Ark., Little Rock.—Board of Control of State Charitable Institutions let contract at \$4687 to J. P. Williams, Newark, Ark., to erect annex to hospital at Confederate Home; plumbing, heating and painting not included in contract; 1 story; 44x92 ft.; general ward for 16 beds; 5 isolated rooms and nurses' room; 10-ft. porch around two sides of present structure and annex; H. J. Harker, Archt., Little Rock.

Mo., Chillicothe.—Postoffice.—Treasury Dept. let contract at \$87,700 to W. H. Fissell & Co., 1133 Broadway, New York, to

erect postoffice; limestone construction; 88x56 ft.; 3 stories and basement; slate or tile roof; reinforced concrete floors. (Lately noted.)

Okla., Bartlesville.—Postoffice.—Maire Bros. Co., Lima, O., and C. E. Burlingame let contract to McGregor & Hinkle to erect post-office building on Keeler Ave.; 50x110 ft.; brick; steel roof; concrete floor; cement sidewalks; cost \$10,000; Walton Everman, Archt., Bartlesville. (Lately noted.)

Okla., Oklahoma City.—Capitol.—State Capitol Com. let contract to Jas. Stewart & Co., Inc., 30 Church St., New York, to erect State Capitol building; reported cost \$1,515,000; Layton & Smith, Archts., Majestic Bldg., Oklahoma City. (Lately noted.)

Tex., Longview.—Postoffice.—Treasury Department, Jas. A. Wetmore, Acting Supervising Archt., Washington, D. C., let contract to Volney E. Taylor, Ennis, Tex., to erect postoffice; cost \$36,850. (Lately noted.)

HOSPITALS, SANITARIUMS, ETC.

Va., Charlottesville.—University of Virginia let contract to King Lumber Co., Charlottesville, to erect wing to hospital; 50x140 ft.; ordinary construction; tar and gravel roof; cost \$50,000; Walter D. Blair, Archt., 599 5th Ave., New York. (Lately noted.)

HOTELS

N. C., Marshall.—Dr. Frank Roberts, Marshall, and John H. Lange, Asheville, N. C., let contract to Associated Engineers' Co. (Chas. N. and H. L. Parker and B. A. Houser), Asheville, N. C., to erect hotel; 4 stories and roof garden; 40 rooms; brick; cost \$25,000.

S. C., Spartanburg.—Spartanburg Hotel Co. has plans by Chas. M. Robinson, Inc., Richmond, Va., for hotel on Spartan Inn site; 7 stories; probably steel and concrete; cost \$225,000 to \$250,000; C. F. Long, lessee, Grand Rapids, Mich.; J. W. Allen, Chrmn.-Building Com.; construction to begin within 90 days; architects wire Manufacturers Record: "Spartanburg Hotel will be fireproof; approximately 125 rooms; Longest & Tessier Co., Greensboro, N. C., with whom tentative contract for erection has been signed, is interested in receiving subbids and quotations on material and equipment."

Tenn., Morristown.—J. C. and L. M. Mitchell and L. V. Rader let contract to Wm. H. Bostwick, Johnson City, Tenn., to erect hotel on Main St.; 47x158 ft.; ordinary construction; Barrett's roof; wood and concrete floor; \$4200 steam heat; electric light; electric elevator; cost \$40,000; C. G. Mitchell, Archt., Johnson City, Tenn.; construction begun; lately noted. (See Machinery Wanted—Telephone Equipment.)

Tenn., Nashville.—Schueler Bros., Nashville, have contract at about \$7000 for marble and tile work on Maxwell House, for which Realty Construction Co., Birmingham, Ala., has general contract to remodel at cost of \$30,000 for hotel and store; Wm. C. Weston, Archt., Birmingham. (Lately noted.)

Tex., Galveston.—Tremont Hotel, H. A. Griffin, Mgr., let contract to J. W. Zempter, Galveston, to remodel front and first floor of hotel.

MISCELLANEOUS

Ark., Hot Springs.—Bathhouse.—Maurice Bath Co. let contract to J. D. Buck, Hot Springs, to alter bathhouse on Central Ave.; fireproof; concrete porch with glass roof; remodel sun parlor; tile roof; art glass ceiling lights; cost \$30,000; Mann & Stern, Archts., Little Rock, Ark. (Lately noted.)

D. C., Washington.—Cafe.—Louis Mandes let contract to Chas. C. Kennon, 715 18th St. N. W., Washington, to remodel cafe at 1113 Pennsylvania Ave.; brick; cost \$3000.

Ga., Atlanta.—Fair.—Southeastern Fair Association let contracts for 2 buildings at Lakewood as follows: Concrete and grading, Nichols Construction Co., Atlanta; steel truss work, Phoenix Iron Works, Philadelphia, Pa.; brick work, S. E. Lilly, Atlanta; reinforced concrete construction; hollow tile walls; practically fireproof; 360x100 ft.; 25 ft. high at walls and 37 ft. high in center; for agricultural exhibits and manufactured products; basement of latter structure for restaurant and booths; cost of these 2 structures which will be erected at present \$110,000 complete; final plans include building for housing cattle, racetrack, midway, etc.; total amount available \$150,000; Edwards & Sayward, Archts., 633 Candler Bldg., Atlanta; W. T. Downing, Supervising Archt., Atlanta; R. M. Walker, Supervising Contr., Atlanta. (Lately noted.)

SCHOOLS

Fla., Tampa.—Board of Public Instruction let contract to Logan Bros., Tampa, to erect 2 junior high schools and Drew School in West Tampa; former 175x144 ft.; mill construction; fireproof; wood and concrete floors; cost \$40,000; heating, \$2500; lighting, \$1000; sidewalks, \$500; Hagy & Parslow, architects, Tampa; Drew School, 66x74 ft.; mill construction; composition roof; wood floors; no heating or lighting plants; cost \$3500; J. W. Biggar, Archt., West Tampa; let contract to Wm. Fry, Tampa, to erect Dobeyville School; 2 stories; 4 rooms; mill construction; Neponset shingle roof; wood floors; no heating and lighting plant; cost \$4000; A. H. Johnson, Archt., Tampa; also let contract to W. Dorey, 7th Ave. and 30th St., Tampa, to erect Oak Park School; 54x70 ft.; 2 stories; 8 classrooms; brick; mill construction; Neponset shingle roof; wood floors; cost \$7000; A. H. Johnson, Archt., Tampa. Address contractor; also let contract to G. A. Miller, Tampa, to erect Tampa Heights School; fireproof; composition roof; cost \$45,000; Francis J. Kennard, Archt., Tampa.

Ga., Decatur.—Trustees let contract to Pike Bros. Lumber Co., Lagrange, Ga., to erect school; 2 stories; brick; 150x50 ft.; cost about \$25,000; Edwards & Sayward, Archts., Candler Bldg., Atlanta. (Lately noted.)

Ga., Hawkinsville.—Trustees let contract to Pike Bros. Lumber Co., Lagrange, Ga., to remodel and practically rebuild high school; 8 rooms; ordinary construction; slate roof; joist floors; low-pressure steam heat; electric lights; Chas. Edw. Choate, Archt., 11 The Prado, Atlanta. (Lately noted.)

Ky., Georgetown.—Scott County Board of Education let contract to Ovid McManus, Georgetown, to erect 2-room brick school at White Sulphur; cost \$4750; completion by September.

La., Chataignier.—School Board of Evangeline Parish, Ville Platte, La., let contract at \$4561 to G. D. Deulle to erect 2-story school at Chataignier and 1-story structure at Point Bleu, La.

La., Collinston.—Morehouse Parish School Board let contract to E. L. Mitchell, Ruston, La., to erect school; 81.6x64.2 ft.; mill construction; asphalt shingle roof; wood floor; cost \$13,000; J. W. Smith, Archt., Monroe, La. (Lately noted.)

La., Point Bleu.—See La., Chataignier.

Md., Gardenville.—Baltimore County School Commissioners let contract at \$14,791.40 to Balke & Engle, Law Bldg., Baltimore, to erect school.

Md., Garrett Heights.—Baltimore County School Commrs. let contract at \$12,478 to Thos. B. Stanfield, 212 Clay St., Baltimore, to erect school.

Miss., Amory.—Town let contract to Inglenook Construction Co., 2008½ 2d Ave., Birmingham, Ala., to erect school; 106x144 ft.; ordinary construction; Barrett specification roof; wood floors; knob and tube lighting; heating under separate contract; cost \$22,000; Bem Price, Archt., Birmingham. Address contractor, Amory; lately noted. (See Machinery Wanted—Hoisting Equipment.)

Mo., St. Louis.—Washington University let contract to James A. Godfrey & Co., 804 Wainwright Bldg., St. Louis, to erect dormitory; 32x68 ft.; fireproof; Barrett specification roof; flat-slab reinforced concrete floors; cost \$35,000; hot-water heat, \$2500; T. C. Link, Archt., Carlton Bldg., St. Louis. (Lately noted.)

N. C., Davidson.—Davidson College let contract to W. A. Potts, Davidson, to erect residence on Concord St. for H. B. Ar buckle; 36x38 ft.; 2 stories; 9 rooms; shingle roof; hardwood and pine floors; hot-water heat; electric lights; cost \$3000; H. C. Dousler, Archt., Atlanta. (Lately noted.)

N. C., Kinston.—State let contract to Blalock Bros., Kinston, to erect dormitory at Caswell Training School; 85x55 ft.; mill construction; Carey roof; pine floor; heating from central plant; knob and tube electric-light system; cost \$12,000; R. F. Smallwood, Archt., 569 5th Ave., New York, N. Y., and Newbern, N. C. Address Contrs. (Lately noted.)

Okla., Clinton.—School Board let contract to Inland Construction Co., Oklahoma City, to erect school building; 96x105 ft.; fireproof; 5-ply pitch and gravel roof; concrete floors in corridors, wood in classrooms; direct-indirect steam heat; electric lighting; cost \$29,000; J. O. Parr, Archt., Security Bldg., Oklahoma City. Address Contractor. (Lately noted.)

Okla., Hunter.—School Dist. No. 4½ let contract to W. E. Corlette, Vinita, Okla.,

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arect school; 70x70 ft.; fireproof; tar and gravel roof; direct-indirect steam heat; C. E. Hair & Co., Archts., Oklahoma City, Okla. (Lately noted.)

S. C., Greenwood.—School Board let contract to J. W. Long to erect consolidated school building at Scotch Cross Roads, near Greenwood; brick veneer; 3 classrooms, cloakrooms, auditorium, etc.; cost \$4000.

S. C., Travelers Rest.—Trustees let contract to J. N. Williams, Travelers Rest, to erect school building; 50x48 ft.; 2 stories; frame with brick veneering; tin roof; double wood floors; cost \$3900; steam heat \$475; Joe T. Lawrence, Archt. Address Contr.

Tenn., Carthage.—City let contract to Beasley & Smith, Springfield, Tenn., to erect school building; 56x100 ft.; fireproof; composition roof; concrete floors; gravity steam heat and ventilation; cost \$15,000; C. K. Colley, Archt., 33 Life and Casualty Bldg., Nashville, Tenn. (Lately noted.)

Tenn., Knoxville.—City let contract at \$7157 to McMurry & LaRue, Knoxville, to erect Rose Avenue School; 32x85 ft.; ordinary construction; slate roof; vacuum system of steam heat; Albert B. Baumann, Archt., 713 Henson Bldg., Knoxville; let contract for plumbing and heating to McGinn & Reiche, Knoxville, at \$1540. (Lately noted.)

Tenn., Oldfort.—Crumley & Fronebarger have contracts at \$6000 and \$4000, respectively to erect grammar school at Taylor's Schoolhouse and Oldfort. Address County School Board, Benton, Tenn.

Tex., Denton.—School Board let contract at \$4185 to T. D. Winn, Denton, to erect negro school; frame; 2 stories; 4 classrooms 23x31 ft.; auditorium, 74x46 ft.; jacketed stoves. (Previously noted.)

Tex., Temple.—City let contract to Smith & Petzold, Waco, Tex., to erect addition to Reagan Grammar School; 48x75 ft.; ordinary construction; composition roof; wood joist floor; cost \$10,000; steam heat, \$4000; electric light, \$125; G. H. Davis, Archt., Temple; lately noted. Address Contrs.

Va., Richmond.—School Board let contract to J. T. Wilson Co., Richmond, to erect Ginter Park School; fireproof; cost \$63,430; heating, \$2473; C. M. Robinson, Inc., Archt., Richmond. (Noted in May.)

Va., Richmond.—School Board let contracts to erect additions to Franklin School on Midlothian Turnpike and Maury School (colored) at 16th and Maury Sts.; brick; cost \$27,177 and \$21,146, respectively; Chas. M. Robinson, Inc., Archt., Richmond. (Previously noted.)

W. Va., Charleston.—Roche-Bruner Building Co., Cincinnati, O., general contractor for high school, let subcontracts as follows: Roofing and sheet metal, Phil Kromer; structural steel, Case Crane & Engineering Co.; miscellaneous iron and ash hoists, Columbus Mill & Mine Supply Co.; flag pole, N. O. Nelson Mfg. Co.; all of Columbus, O.; marble and slate, Cassini Mosaic & Tile Co.; suspended ceilings, Berger Mfg. Co.; tin-clad doors, J. H. Shields; glazing, Wm. Glenny Glass Co.; all of Cincinnati; cut stone work, Thompson & Sandy Stone Co.; plastering, Fred Wilhelm; mill work, Cullen & Vaughn Co.; hardware, J. B. Schroder Co.; painting, J. Simon & Co.; excavating and concrete work by general contractors; plans by F. L. Packard, Columbus, O., call for fireproof structure to cost \$150,000. (Details noted in December.)

STORES

Ala., Birmingham.—Sommers Tailoring Co. let contract to Charles Allen, Birmingham, to remodel interior of store building; plans include front, vestibule, show windows, etc. (Lately noted.)

Ala., Birmingham.—Peter Gulas, Ensley, Ala., let contract to Lynn Construction Co., 307 N. 22d St., Birmingham, to erect store building on 19th St.; brick; tar and gravel roof; cement and wood floors; gas and electric lighting; no heating plant; cost \$3500. (Lately noted.)

Ala., Tuscaloosa.—R. H. Little let contract to M. L. Waddell to erect store; rooms above; 82x100 ft.; 2 stories and basement; ordinary construction; 3-ply asbestos built-up roof; ceramic tile and oak floor; \$2500 steam heat; \$500 electric light; \$3000 luxfer vault lights; \$225 sidewalk lift; cost \$30,000; E. J. Ostling & Son, Archts., Tuscaloosa; lately noted. (See Machinery Wanted—Store Fixtures, etc.)

Ark., Newport.—Norman C. Wolff let contract to W. H. Snetzer, Newport, to erect store building; ordinary construction; 85x90 ft.; Johns-Manville asbestos roof; concrete floors; cost \$10,000; Mann & Stern, Archts., Little Rock. (Lately noted.)

Ark., Russellville.—R. L. Jenkins let con-

tract to erect two 2-story brick business buildings at Main and Torrence Sts.; 30x90 ft. and 25x37 ft.; one leased to Pope County Bank.

Fla., Boca Grande.—F. G. and Ira Thompson let contract to J. H. Brunson, Boca Grande, to erect store and lodge building on Railroad Ave.; 2 stories; 24x60 ft.; 1-story portion 24x20 ft.; ordinary construction; shingle roof; cost \$3000; construction begun. (Lately noted.)

Fla., Tarpon Springs.—E. M. Smith let contract to A. M. Kissick to erect 2-story frame store at Safford Ave. and Lime St.

Ga., Brooklet.—R. H. Warnock let contract to J. L. Wightman & Bro., Guyton, Ga., to erect store building; 45x75 ft.; brick; metal roof; wood floors; electric lights; no heating; cost without equipment \$2700; Mallonee Engineering Co., Archt. (Lately noted.)

Ga., Camilla.—I. Berman let contract to J. W. Middleton, Camilla, to erect store building.

Md., Baltimore.—Thos. J. Hillaird let contract to Ulman & Margolin, 854 E. Pratt St., Baltimore, to erect store and dwelling at Orleans and Spring Sts.; 50x50.4 ft.; ordinary construction; slag roof; wood floor; cost \$3100; heating, \$150; lighting, \$60; sidewalk, \$80. Address L. Ulman, 854 E. Pratt St.

N. C., High Point.—Mrs. Sarah E. Jones, Trinity, N. C., has plans by and let contract to J. O. Connor, High Point, to erect store and office building; fireproof; tin roof; cement floors first story, pine second and third; 24x80 ft.; no heating plant; cost \$3750; lighting, \$100. (Dr. A. C. Jones and Bob Ragan lately noted to erect this structure.)

Okla., Oklahoma City.—F. W. Woolworth & Co. are reported to have let contract to Lisle-Dunning Construction Co., Oklahoma City, to remodel building at 210-12 W. Main St.; 2 stories and basement; cost \$18,000.

Okla., Tulsa.—C. B. Lynch let contract to I. B. Frederick, Tulsa, to erect store and office building at 301-2 S. Cincinnati St.; 2 stories; 45x95 ft.; ordinary construction; gravel roof; first floor cement, second floor wood; cost \$15,000. (Lately noted.)

S. C., Columbia.—W. D. Simpson & Taylor and M. H. Bowen let contract to Seastrunk Contracting Co., Columbia, to erect store and apartment building on Taylor St.; 2 stories; 44x53 ft.; brick; tin roof; electric light; cost \$6000; J. H. Sams, Archt., Columbia. Address Archt. (Lately noted.)

Tenn., Nashville.—Scheuler Bros., Nashville, have contract for marble and tile work on Maxwell House to be remodeled for stores and hotel. (See Hotels.)

Tenn., Nashville.—Tinsley Millinery Co. let contract to Jas. L. Howell & Sons, 129 3d Ave. N., Nashville, to remodel store front; cost \$4000; C. K. Colley, Archt., Life and Casualty Bldg., Nashville.

Tex., Waco.—Southern Union Life Insurance Co. has plans by Edw. H. Reed, 1903 Amicable Bldg., Waco, to remodel store and office building; 100x113 ft.; ordinary mill construction; tin roof; cost \$10,000; heating \$3000; lighting \$1500; H. J. Ainsworth, contractor, Waco; construction to begin July 14. Address Archt. (Lately noted.)

Va., Norfolk.—A. Zedd let contract to Atkinson Building Co., 2 Arcade Bldg., Norfolk, to erect store at 820 Liberty St.; 60x61.6 ft.; ordinary construction; Barrett Specification roof; concrete floor, wood sleepers, overlaid with rift pine; electric and gas light; cost \$5000; Philip B. Moser, Archt., 414 Dickson Bldg., Norfolk. Address Contr. (Lately noted.)

W. Va., Charleston.—Woodrum Home Outfitting Co. let contract to C. W. McNulty, Huntington, W. Va., to erect 6-story building; reinforced with steel; cost \$35,000.

THEATERS

Fla., Tampa.—McGucken & Hyer, Tampa, general contractors to erect Strand Theater, let subcontracts as follows: Plumbing and heating, B. Gagland Plumbing Co.; sheet metal and roofing, Eagle Metal & Roofing Co., both of Tampa; wiring, Florida Electric & Machinery Co., Lakeland, Fla. (Details lately noted.)

N. C., Durham.—J. E. Parrish let contract to Wilkerson-Bowles Construction Co., Durham, to rebuild Arcade Theater; will raise stage 12 feet and double size; erect 20-ft. addition in rear, increase seating capacity, etc.; cost about \$10,000.

S. C., Charleston.—Argyle Hotel Co. is reported to have let contract to erect hotel and theater. (See Hotels.)

Tex., Austin.—Lewis Hancock let contract to Geo. Fiegel, 411 Lavaca St., Austin, to re-

model opera-house; semi-fireproof; tin roof; wood floor; steam heat; electric light; cost \$10,000; plans by Contr. Address Contr. (Lately noted.)

WAREHOUSES

D. C., Washington.—T. T. Keane Co., 619 B St., N. W., let contract to Caylor & Snider, 723 5th St. N. E., Washington, to erect storage building at 621 B St. N. W.; 3 stories; 30x60 ft.; ordinary construction; slag roof; concrete floors; electric lights; cost \$4000 without mechanical equipment; C. V. Snider, Archt., 1103 6th St. N. W., Washington.

Ga., Savannah.—Marcus & Co. let contract

RAILROAD CONSTRUCTION

RAILWAYS

Ala., Birmingham.—W. W. Shortridge of Birmingham and associates, who propose to build an electric railway from Birmingham to the Warrior River, 20 or 25 mi., now announce that it will be continued to Jasper, Ala., about 35 mi. from Birmingham.

Ala., Birmingham.—The DeBardeleben Coal & Coke Co. proposes, it is stated, the construction of a tramroad from Sipsey Mines to the Warrior River, about 6 mi. Henry T. Bardeleben is Pres.

Ala., Florence.—Lauderdale Power Co. is reported promoting plans to build an interurban electric railway from Florence to Huntsville, Ala., about 60 mi.

Ark., Melbourne.—Concerning the proposed railroad about 7 mi. long to connect Melbourne with the St. Louis, Iron Mountain & Southern R. R., A. P. Golden, Secy. Community Improvement Assn., says: "A proposition has been made to build the road, and if it is accepted by citizens of Melbourne and vicinity we may be able to give definite information after the survey, possibly in July or August."

Ark., Cotton Plant.—Cotton Plant & Southwestern Ry. Co., which plans to build a line from Cotton Plant for 18 mi. into the White River bottom lands, and possibly to Kramer, on the Missouri & North Arkansas R. R., has organized by electing the following directors: E. C. Nelson and W. R. Satterfield of Helena, Ark.; E. W. Butler and A. E. Gray of McClelland, and W. Trice of Cotton Plant. Chicago Mill & Lumber Co. of Cotton Plant is promoting the enterprise.

Fla., Miami.—Construction of a municipal railroad to the city docks is contemplated by Edwin Kelly and others, and rights of way are being obtained. E. C. Romfh, a member of the City Council, may also give information.

Fla., Sarasota.—Proposed railroad in which T. C. Williams, Sarasota, and others are interested is from Venice, on the Seaboard Air Line, to Placida, 22 mi.

Ga., Americus.—Georgia Lumber Co. of Byronville, J. S. Morton, Pres., which has a short railroad from Byronville to Flint River, proposes to build to Americus, about 15 mi. Construction may begin this summer.

Ga., Augusta.—Augusta-Alken Ry. & Electric Corp. has increased capital stock from \$1,500,000 to \$2,500,000. An extension from Alken to Columbia has long been contemplated, but whether the stock increase is preliminary to undertaking construction is not yet announced. F. Q. Brown is Pres. and David H. Thomas Secy., Augusta.

Ky., Barbourville.—Contract for a 3-mi. section of the Cumberland & Manchester R. R., which will be 24 mi. long from Barbourville to Manchester, Ky., has been let to T. J. Vermillion & Son of Barbourville. Route of line is via Cannon, Girdler, Hopper and Woolum. M. E. S. Posey, Barbourville, is Ch. Engr.

Ky., Wheeler.—Cumberland R. R. Co., which runs from Artemus to Wheeler, 10 mi., has plans to extend from Wheeler to Jellico, Tenn., about 24 mi., but cannot now say when construction will be resumed. T. H. Hayden is Gen. Mgr. at Artemus, Ky.

Ky., Whitesburg.—Harvey Yeatman, Whitesburg, writes that agents of the Louisville & Nashville R. R. are signing deeds for right of way for a new branch from Blackey (Indian Bottom), up Rock House Creek to new coal mines H. C. Williams, Louisville, is Ch. Engr. of Constr.

Md., Baltimore.—Chesapeake & Curtis Bay R. R. Co. will build about 5 mi. of terminal tracks at Curtis Bay and East Brooklyn, suburbs of Baltimore. John H. Zink, Mgr. United States Asphalt Refining Co. at Curtis Bay may give further information. (See Manufacturers Record, June 24.)

to W. A. Chafee, Savannah, to erect warehouse to replace burned structure.

Ky., Mt. Sterling.—Kirkpatrick & Clay let contract to Ed L. Williams, Mt. Sterling, to erect warehouse on Sycamore St. with sales floor capacity of 150,000 pounds daily; will be leased to Whitehall Tobacco Co.

W. Va., Fairmont.—Chas. E. Manley let contract to T. L. Buchinal, Fairmont, to erect livery and storage building on Meredith St. near Madison; 4 stories rear, 3 stories front; site 76x82 ft.; steel beam and columns; wood joist and floor; Barrett slag roof; cost \$12,000; electric elevator, \$1600; private plans; let contract to Louis A. Hall for brick work.

N. C., Oxford.—Construction of a railroad from Oxford to Roxboro, N. C., about 25 mi., is contemplated. Calton Bros. of the "Caltolina" Land & Lumber Co. may be able to give information.

N. C., Rutherfordton.—Organization of a company to build the projected Rutherfordton-Columbus R. R. is reported. W. A. Harrell, Pres.; W. W. Hicks, Secy. Others on the committee are C. L. Miller, J. C. Mills, K. S. Tanner, W. J. McDaniel, M. L. Justice, C. D. Geer and Dr. M. H. Biggs of Rutherfordton, S. B. Tanner and Paul H. Allen of Charlotte, N. C.

N. C., Shelby.—W. C. Riddick and L. C. Mann of the Agricultural and Mechanical College, Raleigh, N. C., have begun survey out of Shelby for the proposed railroad to Casar, N. C., about 26 mi. Address Railroad Committee, Shelby.

Okla., Bartlesville.—Bartlesville Interurban Ry. Co. will begin work in August to complete its loop line in Bartlesville. S. B. Irelin is Mgr.

Okla., Eufaula.—Missouri, Kansas & Texas Ry., it is reported, has let contract to List & Gifford Construction Co. of Kansas City for 3 mi. revision of line and grade adjacent to crossing of South Canadian River, and contract for new bridge to Wisconsin Bridge & Iron Co. of Milwaukee. L. F. Lonnbladh, Dallas, Tex., is Engr. Maintenance of Way.

Okla., Sand Springs.—Charles Page of Sand Springs is reported contemplating construction of an extension of the Sand Springs Electric Ry. to the oil fields southwest, about 30 mi.

Tex., Amarillo.—Press report that the Santa Fe would make several improvements and extensions in Western Texas is officially denied.

Tex., Amarillo.—A New York syndicate is reported planning construction of a railroad from Amarillo to Kansas City, about 550 mi. Amarillo Board of Development is interested.

Tex., Anahuac.—Survey is reported made through Chambers county for the proposed interurban railway from Beaumont to Anahuac, 36 mi., which is also to be extended to Houston, about 40 mi. farther west. Anson Miller, Pres. Chambers County Progressive League at Anahuac, may give information. A meeting on the plan is to be held at Beaumont early in July.

Tex., Dallas.—Missouri, Kansas & Texas Ry. will spend probably from \$300,000 to \$300,000 for improvements in Texas, principally ballasting and roadbed betterment. L. F. Lonnbladh, Dallas, is Engr. maintenance of way.

Tex., Henrietta.—Oklahoma & Texas Southern Ry. Co. has let contract to Ward & Lee, Floresville, Tex., to build its proposed line from Denton to Buckburnette, Tex., and also from Red River to Fort Smith, Ark., altogether 350 mi. From Denton to Buckburnette is via Krum, Forestburg, Montague, Nocona, Bevering, Byers and Charlie, Tex. From Red River to Fort Smith the route is via Ardmore, Coalgate and McAlester, Okla. Directors are: Pres., R. Burge of Garden City, Mo.; first V-P., A. H. Bevering of Charlie, Tex.; second V-P., W. A. Morris of Montague, Tex.; Treas., T. F. Berner of Henrietta, Tex.; Secy., W. A. Squires of Henrietta; Gen. Mgr., H. C. Babb of Fort Worth, Tex.; G. W. Byers of Byers, Tex.; R. F. Arnold of Henrietta, W. S. Jarrett of Fort Worth. W. R. Heagler of Potosi, Mo., is Ch. Engr.

Va., Norton.—Patrick Hogan of High Knobs is reported planning construction of an electric railway out of Norton, about 5 miles.

Va., Radford.—Contract is finally let to Williams Bros. Construction Co. of Roanoke, Va., for the proposed Radford-Willis South-

ern Ry., 28 mi., and work is to start July 1. T. W. Simpson, Radford, is Ch. Engr.

Va., Richmond.—Richmond & Rappahannock River Ry. Co. says it does not contemplate any new work at present. This refers to recent filing of mortgage for \$500,000, part of which is for permanent improvements.

W. Va., Fairmont.—Western Maryland Ry. Co. has made survey for a spur 7 mi. long from the Baltimore & Ohio R. R. at Farmington to the new coal mines of the Consolidation Coal Co. on Helens Run. Contract for construction will soon be let. H. R. Pratt, Baltimore, is Ch. Engr.

W. Va., White Sulphur.—White Sulphur & Huntersville R. R. Co., it is reported, will build a lumber line from White Sulphur via Montague, Mapledale, Divide, Alvon and Shryock, about 27 mi., with a branch near Shryock to Neola. Date of construction indefinite. Address T. J. Shryock & Co., 717 S. Caroline St., Baltimore.

STREET RAILWAYS

Ark., Little Rock.—Intercity Terminal Ry. Co. is incorporated with \$500,000 capital to build and operate street-car lines and motor vehicles in Little Rock and Argenta. C. C. Kavanaugh is Pres., E. W. Jackson V. P., and F. J. Schmutz Secy. and Treas. The latter is reported saying that the company is organized to take over the Argenta Street Railway.

Ky., Newport.—An electric railway franchise is to be sold Aug. 2 and bids will be received until then. August Helmbold is Mayor.

Tenn., Knoxville.—Knoxville Ry. & Light Co., in addition to some reconstruction, will build a mile of new line between Fountain City and Smithwood.

MACHINERY, PROPOSALS AND SUPPLIES WANTED

Manufacturers and others in need of machinery or supplies of any kind are requested to consult our advertising columns, and if they cannot find just what they wish, if they will send us particulars as to the kind of machinery or supplies needed we will make their wants known free of cost, and in this way secure the attention of manufacturers and dealers throughout the country. The Manufacturers Record has received during the week the following particulars as to machinery and supplies wanted.

"WANTS"

Air Compressors.—See Pumps, etc.—Bureau Supplies and Accounts.

Air Compressor.—See Electrical Equipment, etc.—Bureau Supplies and Accounts.

Air Compressor.—Kaniwha Engineering Co., Charleston, W. Va.—Dealers' prices on air compressor of sufficient capacity to fill a 6x36-in. tank in 40 minutes to a pressure of 1200 lbs.; motor driven; geared, belted or direct connected.

Bank Equipment.—First National Bank, W. N. Stone, Prest., Dalhart, Tex.—Prices on vault doors and safety deposit boxes for \$7500 bank building.

Bending Rolls.—Hamburg Boiler Works, Hamburg, Pa.—Prices and illustrations on one set belt-driven bending rolls; to roll ½-in. plate 10 in. wide, clear to edge, forming complete circle, power raising and lowering of top roll.

Boiler.—See Canning Plant, Woodland & Co.

Boxes (Safety Deposit).—See Bank Equipment.

Brass or Copper Grating.—S. B. Ward, Belle Haven, Va.—Names and addresses of manufacturers of and dealers in brass or copper grating for screen doors; the class of grating used in banks.

Bridge Construction.—Dickenson County Comms., Clintwood, Va.—Bids until July 8 to construct bridge across Cranes Nest River, 12 mi. from Coeburn; length 81 ft. 9 in.; 12-ft. roadway; concrete; alternate bid on cement rubble; plans and specifications on file with State Highway Com., Richmond, and Clerk of Circuit Court, Clintwood; G. P. Coleman, State Highway Commr., Richmond.

Bridge Construction.—Wise County Comms., Wise, Va., and Dickenson County Comms., Clintwood, Va.—Bids until July 8 to construct bridge across Cranes Nest River, 11 mi. from Coeburn; length 71 ft. 9 in.; 12-ft. roadway; concrete; alternate plan on cement rubble; plans and specifications on file with State Highway Com., Richmond, and Clerk of Circuit Court of Wise and Dickenson counties at Wise and Clintwood, respectively; blueprints of plans obtainable from Childrey Co., Richmond; G. P. Coleman, State Highway Commr., Richmond.

Bridge Construction.—Milam County Comms., Cameron, Tex., and Robertson County Comms., Franklin, Tex.—Bids at Hearne, Tex., July 14 to reconstruct bridge across Brazos River at Port Sullivan; bids to be made with view of using all material now on ground; plans and specifications on file with John Watson, Milam County Judge, Cameron, and J. L. Goodman, Robertson County Judge, Franklin.

Bridge Construction.—Wm. Ingles, Chrmn. Committee, Drawer E, Radford, Va. Correspondence with contractors relative to data required by them in submitting bid and estimates of cost of constructing standard highway bridge across New River (to be built jointly by city of Radford and Pulaski county) of following dimensions: Length across water, about 600 ft.; steel trestle approach, 100 ft. on land; height

above mean low water, 35 ft.; piers in water to be steel cylinders filled with concrete; water is shallow with solid rock bottom.

Bridge Construction.—Caroline County Comms., Bowling Green, Va.—Bids until July 8 to construct bridge 60 ft. long over Smoot's Mill Pond, 7¼ mi. from Milford; bridge 36 ft. long over Big Swamp, 3½ mi. from Milford, and bridge 44 ft. long over Temple Mill Stream, 10 mi. from Guinea; all to have reinforced concrete superstructure, plain concrete substructure and 12-ft. roadway; also steel bridge, beam spans, over South River, 5 mi. from Rixey; length 145½ ft.; 12-ft. roadway; concrete substructure; plans and specifications on file at Clerk's Office, Bowling Green, and State Highway Com., Richmond; further information obtainable from G. P. Coleman, State Highway Commr., Richmond.

Bronze Powder.—H. E. Johnson, 12 Melinda St., Toronto, Ont., Canada.—Bronze powder.

Button Machinery.—J. Bounds, Moss Point, Miss.—Names and addresses of manufacturers of button machinery.

Button (Papier Machie) Machinery.—See Papier Machie Machinery.

Building Material.—Burkes Construction Co., Inc., Hattiesburg, Miss.—Quotations on material and from sub-contractors on various lines of material and work in construction of U. S. postoffice and courthouse at Opelika, Ala.; contract to be let in Washington July 14 and information desired in time for consideration in making up proposal.

Building Material.—Xavier A. Kramer, Magnolia, Miss.—Bids on brick mantels, tile, mill work, lumber, etc., for \$5000 residence.

Building Material.—W. L. Ragland, Merchants' National Bank Bldg., Richmond, Va.—Prices on building material, etc., from sub-contractors; material and equipment firms for erection of store building for Miller & Rhoads, Inc.

Buttons (Shoe).—Pioneer Pearl Button Co., Poughkeepsie, N. Y.—Names and addresses of manufacturers of papier mache shoe buttons.

Canal Construction.—Henderson County, Buck River Drainage Dist. (W. F. Appleby, R. E. Owen and W. W. Reed, Commissioners), Lexington, Tenn.—Bids June 30 to construct canal; particulars as to dimension, etc., will be announced on day of letting.

Canning Plant.—Woodland & Co., Morehead City, N. C.—Prices on small cannery for oysters and vegetables; 60 to 75 H. P. boiler, engine, one process kettle and 20 or 25 cars with track; consider second-hand plant in good condition.

Canteens.—See S. Rougen & Co.

Car Wheel Press.—See Press (Wheel.)

Cars.—Woodland & Co., Morehead City, N. C.—Prices on 20 or 25 cars with track.

Cars.—Pennsylvania Equipment Co., Philadelphia, Pa.—Second-hand 36-in. gauge passenger coach.

Cars (Tank).—John C. Brown, Mgr.,

Miami Ice & Cold-storage Co., Miami, Fla.—Names and addresses of dealers in second-hand tank cars for fuel oil.

Charcoal (Filtering).—D. A. Cheney, Orlando, Fla.—Names and addresses of manufacturers and dealers in charcoal for filtering water.

Concrete Curbs, etc.—See Sewer Construction.—W. R. McDade, Town Clerk.

Condensers.—See Pumps, etc.—Bureau Supplies and Accounts.

Conveying Equipment.—See Mining Machinery.—Alva Fitzpatrick.

Cotton Goods.—Hjalmar Minde, P. O. Box 184, Bergen, Norway.—Offers of linen finish lawn; also quality, similar to French, as per sample; can use considerable quantities. (Samples at office of Manufacturers Record.)

Cotton Tape.—Emmet C. Wilson, 38 E. 29th St., New York.—Thin tape or band capable of holding printed figures well and durably under such use as being wound and rewound frequently and rapidly around 2 complementary reels; also wants thin steel tapes or sheets.

Curbing.—Office Board of Purchase, E. R. Conant, Purchasing Officer, Savannah, Ga.—Bids until July 6 to furnish 25,000 ft. straight granite curbing and 2500 ft. 8-ft. radius circular curbing; for further information and specifications address Mr. Conant.

Electrical Equipment.—Bureau Supplies and Accounts, Navy Dept., Washington, D. C.—Bids until July 13 for delivering storage batteries, chairs, air compressor, steel conduit, receiver cords, high-speed drills, fire extinguishers, pipe fittings, gauge-testing outfits, wrought pipe, eye protectors, thermometers and twin conductor wire at Navy yard, Brooklyn, etc. Apply for proposals to navy pay office, New York, or to Bureau.

Electric-light Plant.—C. J. Brasselle, Lakeland, Fla.—Data and net prices on private electric-light plants.

Electrical Equipment.—City of Boswell, Okla.—Bids in about 60 days on electrical equipment for light plant; \$14,000 bonds voted; Jas. T. George, Engr., Ada, Okla.

Electrical Machinery.—Bureau Supplies and Accounts, Navy Dept., Washington, D. C.—Bids until July 13 to furnish 200 storage batteries, f. o. b. works, schedule 8513; 600 receiver cords at Brooklyn, schedule 8525; 6 bearing 3-unit motor generator sets at Annapolis, schedule 8509; two 200 K. W. generating sets at Philadelphia, schedule 8511; four 5 K. W. turbo-generator sets at Norfolk and Charleston, schedule 8511; three 50 K. W. transformers at Norfolk, schedule 8512; twin conductor wire at Brooklyn, schedule 8525.

Electrical Machinery.—Treasury Dept., Supervising Archt.'s Office, Washington, D. C.—Bids until July 30 to supply to Experimental Station, U. S. Bureau of Mines, Pittsburgh, an electric generator and generator panel; copies of specifications obtainable at office of Supervising Archt.

Electrical Machinery.—Bureau Supplies and Accounts, Navy Dept., Washington, D. C.—Bids until July 13 for delivering motor generator set at Naval Academy, Annapolis. Apply for proposals to navy pay office, Baltimore, or to Bureau.

Electrical Machinery.—Invincible Bag Cleaner Mfg. Co., 1812 N. Capitol St., Washington, D. C.—Prices on electric motors; 3 H. P. capacity.

Engine.—See Canning Plant.—Woodland & Co.

Engines.—Invincible Bag Cleaner Mfg. Co., 1812 N. Capitol St., Washington, D. C.—Prices on gas engines; 3 H. P. capacity.

Engine (Steam).—Treasury Dept., Supervising Archt.'s Office, Washington, D. C.—Bids until July 30 to supply to Experimental Station, U. S. Bureau of Mines, Pittsburgh, a steam engine, in accordance with specifications, copies obtainable at office of Supervising Archt.

Flooring.—E. H. Puro, Titusville, Fla.—Prices on flooring material of soft corky substance.

Flour Machinery.—W. B. Hollingsworth, Hampton, Ark.—Open bids in about 2 weeks for flour machinery; 25-bbl. daily capacity mill.

Flour Mills.—Blacklock-Allyn Hardware Co., Wadesboro, N. C.—Catalogues and prices on flour mills.

Furnaces.—Bureau Supplies and Accounts, Navy Dept., Washington, D. C.—Bids until July 13 to furnish 8 corrugated steel furnaces; delivery at Norfolk; schedule \$500.

Galvanized Steel, etc.—Panama Canal, F. C. Boggs, Gen. Purchasing Officer, Washington, D. C.—Bids until July 16 to furnish galvanized steel, steel billets, rivets, bolts, nuts, washers, boat spikes, steel cable, electric cable, brass wire, chisels, sheet brass, bronze bars, brass tubing, copper tubing, solder, shovels, wheelbarrows, jacks, lights, electric-light clusters, window glass, cocks, rubber valves, rubber stoppers, rubber bands, cypress lumber, etc.; blanks and general information relating to this circular (No. 942) may be obtained from this office or offices of assistant purchasing agents, 24 State St., New York; 614 Whitney-Central Bldg., New Orleans, and Fort Mason, San Francisco; also from U. S. Engr. offices in Seattle, Los Angeles, Baltimore, Philadelphia, Pittsburgh, Boston, Buffalo, Cleveland, Cincinnati, Chicago, St. Louis, Detroit, Milwaukee, St. Paul, Chattanooga, Louisville, Mobile and Galveston; Commercial Club, Kansas City, Mo.; Chamber of Commerce, Quincy, Ill., and Commercial Club, Tacoma, Wash.

Glove (Canvas) Equipment.—Reidsville Commercial and Agricultural Assn., Reidsville, N. C.—Estimates on equipping moderate size canvas glove factory.

Hardware.—See Manufactures.—Charles E. Selby.

Heating Equipment (Steam).—First National Bank, W. N. Stone, Prest., Dalhart, Tex.—Prices on steam-heating plant for \$7500 bank building.

Holisting Equipment.—Inglenook Construction Co., 208½ 2d Ave., Birmingham, Ala.—Double drum holisting equipment; second-hand considered.

Hosiery Yarns.—See Knitting Machinery, etc.—Manuel Lopez Leal.

Household Articles.—See Manufactures.—Charles E. Selby.

Ice Plant.—Ed. Bulliard, St. Martinville, La.—Second-hand 10-ton ice plant.

Incinerators.—Xavier A. Kramer, Archt. Engr., Magnolia, Miss.—To correspond with manufacturers of municipal garbage incinerators.

Incinerating Plant.—Madorie & Bird-sall, 832 Reserve Bank Bldg., Kansas City, Mo.—Data and prices on construction incinerating plant costing about \$300,000; want complete information.

Injectors (Boiler).—See Pumps, etc.—Bureau Supplies and Accounts.

Kettle.—See Canning Plant.—Woodland & Co.

Knitting Machinery.—H. M. Shaw, Oxford, N. C.—To correspond with manufacturers of knitting machinery.

Knitting Machinery, etc.—Manuel Lopez Leal, for Sociedade "Jacarehy Industrial," 16 a Rua da Quitanda (sobrado), Sao Paulo, Brazil.—Data and prices on hosiery knitting machinery and on white and colored yarns for knitting all kinds of hosiery.

Lampblack Machinery.—R. G. Lavery, care Oil Wells Supply Co., Cushing, Okla.—Data and prices on machinery for manufacturing lampblack from natural gas and from crude oil; also particulars as to marketing lampblack.

Levee Construction.—Third Mississippi River Dist., P. O. Box 404, Vicksburg, Miss. Bids until July 12 to construct 1,415,000 cu. yds. levee work; information on application.

Lighting Equipment.—First National Bank, W. N. Stone, Prest., Dalhart, Tex.—Prices on lighting fixtures for \$7500 bank building.

Lighting Equipment.—A. B. Cox, Box 612, Westernport, Md.—Prices on gasoline hollow wire system lights, or pressure or gravity lights.

Lumber.—Bureau Supplies and Accounts, Navy Dept., Washington, D. C.—Bids until July 13 to furnish 31,760 ft. long-leaf yellow pine at Norfolk; schedule 8512.

Lumber.—G. C. Buquo Lime Co., Hot Springs, N. C.—20,000 ft. long-leaf pine timber for track scale and other outside construction.

Lumber.—See Building Material.—Xavier A. Kramer.

Mantels (Brick).—See Building Material.—Xavier A. Kramer.

Magnesite.—H. E. Johnson, 12 Melinda St., Toronto, Ont., Canada.—Crude magnesite.

Manufactured Products.—Luis E. Fellu y Cia, Calle de Blanco, No. 973, Valparaiso, Chile.—To correspond with American manufacturers relative to representing them as intermediates between sellers and buyers; especially interested in turpentine, first and second distillation; writing paper and similar goods; china and glass, especially pressed glass; electrical supplies; cotton

seed oil, table oil and lubricating; firearms and cartridges; varnishes; jewelry and watches; iron safes; carbide of calcium; shoes and leather for making shoes; tacks and nails; men's furnishing goods, etc.; coal; drugs and pharmaceutical articles; stearine; glass bottles—fine bottles a specialty; glucose; flour; workmen's tools; cheap typewriting machines; oleomargarine; furniture—ornamented and other; sandpaper; paraffine and petroleum; plated goods; sacks for wheat, flour, etc.; saccharine; chemical products; cotton and wool textures; prints; also machinery, including equipments for making castor and cottonseed oil, for preparing cotton, making products such as "Quaker Oats," and for treating barley, etc.

Manufactures.—Charles E. Selby, 76 Pitt St., indent and manufacturer's agent, Sydney, Australia.—To represent American manufacturers of household articles, whale oil, fiber boards, aluminum, china and glassware, enameled ware, basting spoons, etc.

Metal Products.—See Manufactures.—Charles E. Selby.

Metals.—Bureau Supplies and Accounts, Navy Dept., Washington, D. C.—Bids until July 13 to furnish composition plates at Norfolk and Charleston, schedule 8501; 7500 lbs. medium steel angles at Charleston, schedule 8522; 27,000 lbs. steel bars and shapes at Norfolk, schedule 8500; steel boiler plates at Norfolk, schedule 8513; 5100 lbs. high tensile steel plates and 43,000 lbs. medium steel plates at Charleston, schedule 8522; 187,500 open hearth steel plates at Norfolk, schedule 8500; 25,100 lbs. steel sheet at Norfolk, schedule 8513.

Mining Machinery.—Alva Fitzpatrick, 61 S. Goldthwaite St., Montgomery, Ala.—Machinery for mining and handling hard and soft, red and yellow ochre.

Oil Mill Machinery.—See Manufactured Products.—Luis E. Felu y Cia.

Papier Mache Buttons.—See Buttons (Shoe.)

Paving.—B. A. Wise, City Mgr., Charleston, W. Va.—Bids until July 5 to pave and curb Laurel Ave. from Myrtle to Neal Ave., Neal Ave. from Laurel to Walnut Ave., Walnut Ave. from Bridge to Neal Ave. and from Neal to Locust Ave.; consider all well-known classes of paving material; for plans, specifications and further information address J. M. Clarke, City Engr., Lowenstein Bldg., and O. B. Bobbitt, City Clerk, City Hall.

Paving.—City of Nashville, N. C., M. W. Lincke, Mayor.—Bids opened June 26 to construct 1250 sq. yds. concrete sidewalk and 300 lin. ft. concrete curb; plans and specifications on file with Decker & Wright, Ch. Engrs., Nashville.

Paving.—E. D. Huson, Town Clerk, Mansfield, La.—Bids until July 6 to construct about 10,130 sq. yds. street paving, 3500 lin. ft. curbing and 260 lin. ft. storm sewer; separate bids on brick on concrete base, sheet asphalt, bitulithic on concrete base, concrete, creosoted wood blocks and asphaltic concrete; information for bidders, plans and specifications on file with E. E. Swope, Town Engr., and may be obtained for \$3.

Paving.—Commr. of Streets and Public Property, Cumberland, Md.—Bids until July 1 to construct about 270 ft. concrete curb and 225 sq. yds. concrete sidewalks on Water St. in rear of water-works lot; specifications obtainable from Jns. P. Gaffney, City Engr.

Paving.—Commrs. of Public Works, D. B. McKay, Chmn., Tampa, Fla.—Bids until July 6 to pave with sand-asphalt 3200 sq. yds. on North Boulevard, 300 sq. yds. on Highland Ave. and 2900 sq. yds. on streets surrounding Highland Park; specifications obtainable from City Engr.; Allen Thomas, Clerk.

Paving.—Clifford R. Foster, State Arsenal, St. Augustine, Fla.—Bids until July 2 to construct about 10,000 sq. yds. No. 2 vitrified brick roadway with concrete curbing within State Camp Grounds at Black Point; specifications on file at State Arsenal.

Paving.—F. J. Von Zuben, City Engr., Fort Worth, Tex.—Bids until July 6 to pave Richmond Ave. from Evans to New York Ave., containing about 1155 sq. yds., and Grainger St. from Broadway to Peter Smith St., containing about 2166 sq. yds., with asphalt macadam or asphaltic concrete pavement; proposal forms and specifications on file with City Engr.; R. G. Littlejohn, Commr. of Streets.

Paving.—City Council, Sarasota, Fla.—Bids until July 24 for 14,000 sq. yds. paving on Palm and Strawberry Aves.; bids on following materials: Brick, asphaltic concrete, modified asphalt and fibered asphalt; bidders

to specify when writing which class of pavement they wish to bid on; specifications on file with Fitch P. Wright, Commr. of Public Works.

Paving.—E. D. Bass, Commr. Dept. Streets and Sewers, Chattanooga, Tenn.—Bids until July 9 to repave portions of Market and E. 9th Sts.; creosoted wood block or sheet asphalt paving; about 20,000 sq. yds.; blank proposal forms and specifications furnished for \$5.

Paving.—C. C. Pashby, City Clerk, Memphis, Tenn.—Bids opened June 29 to pave Manassas St. from Union to Beale Ave.; 700 sq. yds. concrete paving, including grading; 20 lin. ft. granite curb reset and 50 sq. ft. sidewalk removed and replaced; also to pave Mississippi Blvd. from Calhoun Ave. to Lauderdale St.; 7100 sq. yds. asphaltic concrete paving; 2000 sq. yds. concrete foundation; 300 sq. yds. granolithic sidewalk; 300 sq. ft. concrete water table; 200 lin. ft. 6-in. granite curb removed; 176 lin. ft. 6-in. granite radius curb corners furnished in set; 100 lin. ft. 6-in. granite curb reset; 225 lin. ft. concrete box drains with inlets, manholes, etc.; specifications and profiles on file with City Engr.; E. H. Crump, Mayor.

Paving, etc.—Leon E. Briggs, City Engr., Webb City, Mo.—Bids until July 6 to construct concrete sidewalks, grade, etc., both sides of Hall St. from Garrison to Noble Ave.; also subgrade and gravel at grade roadway of Austin St. from Madison to College St.; plans and specifications on file with City Clerk.

Paving, etc.—City of Laurel, Miss., D. F. Gardiner, Clerk.—Bids until July 20 on 27,753 sq. yds. asphalt pavement, 10,078 sq. yds. wood block pavement, 23,098 sq. yds.

Hall; Robt. L. Clemmitt, Acting Water Engr.; Ezra B. Whitman, Consult. Engr. (Lately noted.)

Pumps, etc.—Bureau Supplies and Accounts, Navy Dept., Washington, D. C.—Bids until July 13 to furnish 4 horizontal duplex fuel oil pumps, 4 vertical simplex feed pumps and 2 single-acting air pumps at Norfolk and Charleston, schedule 8501; 6-gauge testing outfits at Brooklyn, schedule 8524; 2 double tube boiler injectors at Norfolk and Charleston, schedule 8501; 4 air compressors, f. o. b. works, schedule 8510; 2 auxiliary condensers at Norfolk and Charleston, schedule 8501.

Rails.—See Cars.—Woodland & Co.

Rails.—L. F. Hobbs, Box 483, Norfolk, Va.—1800 tons first quality 70-lb. relaying steel rail; Pennsylvania delivery; best price and location for inspection in first letter.

Reamers.—Bureau Supplies and Accounts, Navy Dept., Washington, D. C.—Bids until July 13 for delivering high-speed reamers at naval torpedo station, Newport, R. I. Apply for proposals to navy pay office, Newport, or to Bureau.

Rifles, Ammunition, etc.—S. Hougou & Co., 36 Rue Constantin, Bordeaux, France. To correspond (relative to representation) with American manufacturers of rifles, ammunition, barbed wire, canteens, etc.

Road Construction.—Osceola County Commrs., Kissimmee, Fla.—Bids until July 5 to construct 2½ mi. brick road; R. H. Ludlum, Engr.

Road Construction.—Highway Commrs., Supr's. Dist. No. 5, Copiah county, Hazlehurst, Miss.—Bids until July 6 for road improvements lately noted; to include clear-

ton, Ga.—Bids until July 6 to improve Chattanooga-Birmingham highway through Dade county; specifications, instructions to bidders, etc., on file with Commrs. at Trenton and Edward E. Betts Engineering Co., 703 James Bldg., Chattanooga, Tenn.

Road Construction.—Prince George's County Commrs., Upper Marlboro, Md.—Bids until July 6 to construct 1.59 mi. State-aid highway on Riggs Rd. from Section 1 to Averil; bids to be made on blank forms obtainable from State Roads Com., 601 Garrett Bldg., Baltimore; plans can be seen and forms of specification and contract obtained (for \$1) from State Roads Com.

Road Construction.—Russell County Commrs., Lebanon, Va.—Bids until July 6 to grade about 1½ mi. road between J. T. Candler's and Fincastle Rd.; plans and specifications on file at Clerk's office, Lebanon; A. H. Pettigrew, Bristol, Va., and State Highway Com., Richmond; further information from G. P. Coleman, State Highway Commr., Richmond.

Road Construction.—Hale County Commissioners, Greensboro, Ala.—Bids until July 27 to grade, drain and surface with gravel part of Greensboro and Uniontown Rd.; expenditure \$4625.16; W. S. Keller, State Highway Engr., Montgomery.

Road Machinery.—Arthur Gernt, Secy., Fentress County, Allardt, Tenn.—Prices on road-building machinery.

Road Oiling.—Baltimore (Md.) Board of Awards, City Hall.—Bids until July 7 (bids lately noted to be opened June 16) to oil about 4.9 mi. macadam road at Loch Raven, Improvement of Gunpowder Supply, contract No. 42; section No. 1, 24,916 sq. yds.; section No. 2, 9540 sq. yds.; plans, specifications obtainable from Robt. L. Clemmitt, Acting Water Engr., City Hall, for \$5.

Sewer Construction.—Leon E. Briggs, City Engr., Webb City, Mo.—Bids until July 6 to construct sanitary sewer in Sewer Dist. No. 44; plans and specifications on file with City Clerk.

Sewer Construction.—Dist. Commrs., 539 District Bldg., Washington, D. C.—Bids until July 7 to construct 6000 lin. ft. pipe sewer 10 to 12 in. diam.; proposal forms, specifications and information obtainable from Chief Clerk, Engr. Dept., Room 427, District Bldg.

Sewer Construction.—W. R. McDade, Town Clerk, Cloverdale, Ala.—Bids until July 27 to construct sanitary and storm sewers, concrete curb and gutters; plans and specifications obtainable from Smith & Carter, Engrs., Montgomery; J. M. Foster, Mayor.

Sewer Construction.—City Commrs., Tulsa, Okla.—Bids until July 6 to construct storm sewers, including catch-basins, manholes, etc., to drain portion of Main St.; plans and specifications on file with E. B. Cline, City Auditor; proposal sheets furnished by City Engr.

State (Roofing).—Dept. of Justice, Office Supt. Prisons, Washington, D. C.—Bids until July 23 to furnish and deliver (at U. S. Penitentiary, Atlanta, Ga.) roofing slate for bath, laundry and tailor shop building; specifications on application.

Shoe Manufacturers.—Casasus, Sierra & Retana, imports and exports, 25 Broad St., New York.—To arrange (for European correspondents) for exclusive agency of American shoe manufacturer.

Soda Fountains.—E. J. Ostling & Son.—See Store Fixtures, etc.

Steel (Manganese) Manufacturers.—E. P. Burton Lumber Co., P. O. Box 850, Charleston, S. C.—Names and addresses of manufacturers of manganese steel.

Steel Tape.—See Cotton Tape.

Store Fixtures, etc.—E. J. Ostling & Son, Tuscaloosa, Ala.—Addresses of soda fountain manufacturers, tables and chairs for ice-cream parlor, candy and cigar counters.

Tank (Steel).—Bureau Yards and Docks, Navy Dept., Washington, D. C.—50,000-gal. steel fuel-oil storage tank; delivered and erected at Key West; specifications on application to Bureau or Commandant of naval station named.

Vault Doors.—See Bank Equipment.

Telephone Equipment.—Wm. H. Bostwick, Johnson City, Tenn.—Prices on telephone equipment for \$40,000 hotel.

Tent.—A. B. Cox, Westernport, Md.—Tent, 40x54 or 40x69 ft., for gospel meetings; also one near 9x20 ft., for living purposes.

Textiles.—See Manufactured Products.—Luis E. Felu y Cia.

Tile.—See Building Material.—Xavier A. Kramer.

FOR the benefit of business concerns, engineers, contractors, machinery manufacturers, dealers and others who find it profitable to follow up daily the industrial, commercial, railroad and financial development of the South and Southwest as published in this Construction Department,

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gravel pavement and 35,200 sq. ft. concrete sidewalks; specifications on application to H. W. Bell, City Engr.

Peanut Roaster.—Marion Truck Assn., Marion, La.—Small peanut roaster to kill weevils in peas and beans.

Piling (Creosoted), etc.—Board Port Commrs., New Orleans, La.—Bids until July 14 to furnish creosoted piling and lumber, etc.; plans, specifications, proposal forms, etc., on file with J. Devereux O'Reilly, Engr., 200 New Orleans Court Bldg.

Pipe, Fittings, etc.—See Electrical Equipment, etc.—Bureau Supplies and Accounts.

Plumbing.—Geo. E. Lafaye, Archt., Columbia, S. C., for Board of Regents of State Hospital for Insane.—Bids until July 5 to install plumbing equipment in administration building.

Press (Wheel).—H. W. Dexter, P. O. Box 1417, Jacksonville, Fla.—Second-hand hydraulic wheel press for car wheel work.

Pump, etc.—Baltimore (Md.) Board of Awards.—Bids until July 14 to furnish and install 20,000,000-gal. centrifugal pump and electric power equipment for water-works pumping station; machinery to include 3 250 K. V. A. transformers, 800 H. P. motor, 25 H. P. motor, etc.; plans, etc., on file and obtainable from office Water Engr., City

ing, grubbing, grading, surfacing, concrete, etc.; concrete for smaller bridges, large culverts, abutments of large bridges, etc.; vitrified, cast or corrugated iron pipe or concrete for drains; plans, profiles, etc., at office Chancery Clerk of Copiah County and of Xavier A. Kramer, Engr., Crystal Springs and Magnolia, Miss.; engineer will furnish specifications and blank forms.

Road Construction.—Gregg County Commrs., Court, Longview, Tex.—Bids until June 14 to grade and surface with stone and gravel 15 mi. of Shreveport-Dallas Highway; D. K. Carroll, County Engr.

Road Construction.—Goods Roads Com. of Beat 1, Lauderdale County, Meridian, Miss.—Bids until July 9 to construct streets and highways in and near Meridian; macadam construction; later to be treated with bituminous wearing surface; \$50,000 bonds voted; J. T. Pinkston, Engr., Courthouse Bldg., P. O. Box 73, Meridian.

Road Construction.—Dept. of Public Finances, A. G. Ricks, Commr., City Hall, New Orleans, La.—Bids until July 27 to construct road from point connecting with Chef Menteur Rd., near Chef Menteur, and thence to Rigolets; plans and specifications on file with City Engr.

Road Construction.—Dade County Road Commrs., I. H. Wheeler, Chmn., Tren-

Water-works.—J. G. Sutton, City Secy., Beaumont, Tex.—Bids until July 14 to construct 30-in. cast-iron pipe line across Neches River, canal intake and other improvements in connection with canal extension for water-works system; plans and specifications on file with City Secy., Beaumont, and Burns & McDonnell, Engrs., Scarritt Bldg., Kansas City, Mo.; extra copies of plans and specifications obtainable from Engrs. for \$5.

Water-works Construction.—City of Ashland, Ala.—Bids until July 7 to construct complete water-works; about 4 mi. 8, 6 and 4-in. cast-iron and 2-in. galvanized pipes, with hydrants, valves and specials; 150,000-gal. earth reservoir lined; pump-house, including motor-driven pump; masonry dam and intake; plans at offices of H. L. Adair, Mayor, and of Edgar B. Kay, Engr., Tuscaloosa, Ala.

Welding Equipment.—Frederick H. Lord, Belle Haven, Va.—Data and prices on machinery for welding broken castings.

Wheat.—Charles E. Selby, 76 Pitt St., Sydney, Australia.—To represent American shippers of wheat. (See Manufacturers.)

Windows.—G. C. Buquo Lime Co., Hot Springs, N. C.—75 10x14 light windows complete with frames.

Wire (Barbed).—See S. Houghton & Co.

FINANCIAL NEWS

The MANUFACTURERS RECORD invites information about Southern financial matters, items of news about new institutions, dividends declared, securities to be issued, openings for new banks, and general discussions of financial subjects bearing upon Southern matters.

FINANCIAL CORPORATIONS

Fla., Jacksonville.—Southeastern Trust Co. of Jacksonville, capital \$20,000, is organized with Charles R. Rudisill, Pres.; R. C. Middleton, V.-P.; J. S. Peterson, Secy.; Walter J. Bryson, Treas.

Fla., Lake Wales.—Lake Wales State Bank is organized thus: E. C. Stuart, Pres.; A. C. Thulbery, V.-P.; John G. Sessoms, Cash.

Ga., Macon.—The Leon S. Lure Co., capital \$100,000, with privilege of increasing to \$500,000, has filed articles of incorporation to do a trust, savings and loan business; organizers, Leon S. Lure, E. E. Valentine and J. M. De Borde.

Ky., Livermore.—Farmers & Trader's Bank and the Bank of Livermore have consolidated; capital \$30,000.

Ky., Murray.—First National Bank has made application to organize; capital \$25,000.

Ky., Paducah.—Tri-State Investment Co., capital stock \$500, is inceptd. for real estate business; Pres., D. H. Hughes; Secy.-Treas., F. E. Carpenter.

Md., Baltimore.—Liberty Bank of Baltimore County, capital \$25,000 and surplus \$5000, is organized with the following officers: Dr. A. C. Smink, Pres.; Horace L. Smith, V.-P.; F. Craig Morton, Cash.; H. Webster Smith, Counsel; and Andrew B. Banghart, Thomas R. Bond, Frank H. Calloway, Edward S. Choate, William E. George, G. H. Haynes, Bancroft Hill, Theodore Mottu, William F. Piel, Jr., Harry M. Ramey, Lafayette H. Temple and A. A. Blakeney, directors.

Miss., Petal.—Forrest Securities Co. of Petal, a new concern, is chartered and will begin business in July; capital \$19,500; incorporators, J. P. Carter, G. J. Hauenstein and H. S. Stevens, all of Hattiesburg, Miss.

Miss., Rosedale.—First National Bank of Rosedale, successor to the Bank of Rosedale, is chartered; capital \$25,000. Directors are J. A. Eddins, Pres.; D. S. Farrar, V.-P.; W. F. Wall, Cash.; J. A. Crawford, Morris Rosenstock, P. H. Joest and E. J. Acree.

Mo., Nixa.—The Bank of Nixa has absorbed the Citizens' State Bank of Nixa.

Okla., Oklahoma City.—Phenix Mortgage Co. chartered and inceptd.; capital \$25,000; has begun business; John W. Ervin, Pres.; Robt. Burns, V.-P.; Thomas E. Toney, Secy. and Treas., and B. T. Hainer, Judge.

S. C., Clifton.—The People's Savings Bank of Clifton and Glendale has been granted a commission; capital \$5000; petitioners, A. T. Sloan, T. S. Bagwell and John B. Cannon.

S. C., Spartanburg.—People's Savings Bank of Glendale and Clifton has been issued a commission; capital \$5000; organizers, A. T. Sloan of Clifton, T. S. Bagwell of Glendale and John B. Cannon of Spartanburg, the latter being cashier of the Bank of Spartanburg.

S. C., Spartanburg.—Spartan Savings Bank, capital \$5000, is organized by H. V. Johnson, W. R. McGraw, W. C. Hammett, John F. Stevens, J. H. Griffin, J. T. Cothran, Calvin Whitten, O. L. Johnson and John B. Cannon. John B. Cannon will be Pres.; J. T. Cothran, V.-P., and H. V. Johnson, Cash. Business is to begin about July 1.

S. C., Whitmire.—Bank of Whitmire has been organized by Z. H. Suber, J. L. Miller and W. R. Watson.

S. C., York.—York Trust Co. of York chartered; capital \$25,000; petitioners, O. E. Wilkins, W. Witherspoon, W. B. Moore, J. M. Stroup, R. C. Alleis, W. G. White and J. L. Rainey. Business is to begin in about 30 days.

Va., Petersburg.—Farmers and Mechanics' Bank chartered; authorized capital \$50,000; B. R. Walters, Pres.; J. W. Long, V.-P.; H. J. Watkins, Jr., Cash. Business is to begin July 15.

Va., Ravenswood.—First National Bank is approved; capital \$35,000.

W. Va., Huntington.—Huntington Building & Loan Assn. inceptd.; capital \$100,000; incorporators, F. H. Medley, W. E. Minter, C. W. Campbell, C. L. Rice, R. L. Archer, R. F. Carson and others of Huntington; W. T. Green, David Dick, Harrison B. Smith and Isadore Schwabe of Charleston, W. Va.

NEW SECURITIES

Ala., Girard.—City Council will act July 6 on proposition to issue \$25,000 of bonds for high school and funding. W. E. Morgan is Mayor.

Ala., Orrville.—G. J. Ellis, Mayor, denies report that city proposes to issue bonds.

Ark., Griffithville.—An issue of school bonds has been purchased by Gunter & Sawyers, Little Rock. J. W. Rhea is Secy. School Board.

Ark., Mineral Springs.—\$2000 school-building bonds have been purchased by Gunter & Sawyers, Little Rock, Ark. Sims F. Dillard is Pres. School Board.

Ark., Omaha.—\$10,000 Special School Dist. bonds are voted. Address Board of Trustees.

Fla., Arcadia.—Bids will be received until noon August 1 for the following 6 per cent. DeSoto county bonds: \$12,500 15-30-year Popash Special Tax School Dist. No. 4; \$3000 10-year bonds Owens Special School Dist. No. 7; \$8000 10-20-year Charlotte Harbor Special Tax School Dist. No. 34; \$20,000 15-30-year Bowling Green Special Tax School Dist. No. 10; denomination \$500. Jas. O. Bickley is Secy. Board of Education, DeSoto county.

Fla., Bradentown.—Election July 19 on \$110,400 road and bridge bonds of Parrish Dist., Manatee county. M. G. Rushton is Chrmn. at Bradentown.

Fla., Bradentown.—\$50,000 bonds for funding outstanding indebtedness have been voted and \$10,000 poor farm bonds defeated by Manatee county. M. G. Rushton is Chrmn. Board of County Commrs.

Fla., Bradentown.—Election is to be held in Special School Tax Dist., Palmetto No. 33, Manatee county, July 10 to vote on \$50,000 6 per cent. 20-year \$1000 denomination bonds. Address members of School Board and County Supt.

Fla., Clearwater.—Election is to be held in Pinellas county to vote on \$12,000 Ozona Dist. and \$1250 Pinehurst Dist. school bonds. Curlew and Wall Springs Dists. also contemplate issuing bonds. Dixie M. Hollins is Secy. Board of Public Instruction.

Fla., Clearwater.—\$20,000 Special School Tax School Dist. No. 2, Clearwater, and \$15,000 Special Tax Dist. No. 6, Green Springs, 6 per cent. 25-year Pinellas county school bonds have been purchased at a premium by Bumpus & Co., Detroit.

Fla., Crawfordville.—Election is to be held in eastern section of Wakulla county to vote on road-construction bonds. J. M. Towles is Clerk Board of Commrs.

Fla., Fort Meade.—All bids received June 15 for the \$58,000 5 per cent. 30-year paving, electric-light, water and sewer bonds were rejected, and later on new bids will be asked. J. J. Singleton is Secy. Board of Bond Trustees.

Fla., Lake City.—Election July 8 on \$250,000 of 5 per cent. 30-year road bonds of Columbia county. J. L. Markham is Clerk Circuit Court.

Fla., Miami.—\$15,000 6 per cent. 15-year bonds Special School Tax Dist. No. 9, Dade county, have been purchased by Sidney Spitzer & Co., Toledo, at 101.60.

Fla., Miami.—Election is to be held Aug.

19 to vote on \$550,000 of bonds for Biscayne Bay channel, municipal docks and bridges and sewers. A. J. Rose is City Atty.

Fla., Palmetto.—Election is to be held to vote on \$25,000 6 per cent. 20-year water-works extension, sewer and street-improvement bonds. T. S. Pollard is City Clerk.

Fla., Sanford.—Election will probably be held in Seminole county to vote on \$200,000 road bonds. Address County Commrs.

Fla., St. Augustine.—\$12,500 6 per cent. 10-year bonds Special Drainage Dist., St. Johns county, have been purchased at par by Joseph and J. H. Lynn.

Fla., Tavares.—Bids will be received until 11 A. M. July 6 for \$10,000 of 6 per cent. school warrants of Leesburg Dist. No. 21, Lake county. Address Supt. of Public Instruction at Tavares.

Fla., Winter Park.—Bids will be received until 10 A. M. July 22 by C. D. Powell, Chrmn. Finance Committee, for \$12,000 7 per cent. 1-24-year improvement bonds.

Ga., Blakely.—Election is to be held July 10 to vote on \$10,000 5 per cent. 1-20-year \$500 denomination municipal ice-plant bonds. M. T. Chipstead is Mayor.

Ga., Cartersville.—Election will be held July 17 to vote on \$60,000 sewerage and drainage, \$15,000 street, \$5000 water and \$5000 school building 5 per cent. 29-year \$1000 denomination bonds. G. W. Young is Mayor and G. W. Waldrup Clerk.

Ga., Chatsworth.—Election will be held July 17 (not July 15 as previously stated) to vote on \$15,000 5 per cent. 30-year \$600 school district building bonds, dated Sept. 1, 1915, and maturing Dec. 1, 1945. Address Board of Trustees of Dist., E. R. Glenn, Chrmn.

Ga., Ocilla.—Election July 15 on \$50,000 road bonds of Irwin county. James Whitely is Clerk to County Commrs.

Ga., Lafayette.—Election is to be held in Walker county July 7 to vote on \$75,000 courthouse and \$75,000 road 5 per cent. 29-year \$1000 denomination bonds. John C. Young, J. M. Ransom, R. B. Shaw, A. J. Wheeler and J. D. McConnell, Commrs. of Roads and Rev.

Ga., Savannah.—Election will be called in Chatham county to vote on \$1,000,000 road and school bonds. Address County Commrs., Oliver T. Bacon, Chrmn.

Ky., Carlisle.—\$15,000 school bonds are voted. Address School Board.

Ky., Owensboro.—\$600,000 Daviess county road bonds defeated.

Ky., Mt. Vernon.—The \$100,000 Rockcastle county road-improvement bonds, for which bids are being received until noon July 1, are 5-30-year 5 per cents. G. M. Ballard is County Judge.

Ky., Stanford.—Election is to be held in Lincoln county Sept. 18 to vote on \$130,000 road bonds. Address County Commrs.

La., Bastrop.—Bids will be received at any time for \$55,000 5 per cent. 1-20-year bonds Morehouse Parish School Dist. No. 2. Address Secy. Parish School Trustees.

La., Bastrop.—\$10,000 refunding and \$16,000 water and light bonds have been purchased by J. R. Sutherland & Co., Kansas City, at par less commission. G. H. Beckman is Mayor.

La., Bogalusa.—Election is to be held about Aug. 1 to vote on \$200,000 water-works, sewerage, school and city hall bonds. Address The Mayor.

Miss., Clarksdale.—\$150,000 bonds for city hall, school, fire station, light and sewerage are voted. Address The Mayor.

Miss., Kosciusko.—\$30,000 water and light plant bonds are voted. Address The Mayor.

Miss., Mendenhall.—The \$2600 of 6 per cent. school bonds, for which bids are invited until July 6 at 8 P. M., are in denominations of \$200 each, excepting one of \$800. The former mature one every year for nine years, while the larger bond matures in the tenth year. D. C. Hall is Clerk.

Miss., Meridian.—Election is to be held July 23 to vote on \$40,000 city hall and jail and \$25,000 sanitary sewer and drainage 5 per cent. 25-year bonds. Address Mayor Parker.

Miss., Mississippi City.—\$15,000 6 per cent. bonds Mississippi City Rural School Dist. have been purchased by the Whitney Central Trust and Savings Bank, New Orleans, at 101.34.

Miss., Pascagoula.—Bids will be received until noon July 6 by L. D. Herrick, City Clerk, for \$17,000 6 per cent. public-wharf site purchase bonds; denomination \$1000.

Mo., Kirksville.—The election ordered for June 24 to vote on \$70,000 water and light

bonds was called off. Chas. E. Murrell is Mayor.

N. C., Burlington.—Bids will be received until 8.30 P. M. July 12 for \$40,000 5 per cent. 30-year \$1000 school-building bonds. Address The Mayor.

N. C., Cherryville.—\$15,000 5½ per cent. 30-year school bonds have been purchased at 102.50 by Bolger, Mosser & Willaman of Chicago.

N. C., Durham.—Election will probably be held to vote on \$50,000 school bonds. Address Board of School Trustees.

N. C., Gastonia.—\$100,000 school bonds are voted. Address Board of Education.

N. C., Gastonia.—Election in Gaston county August 3 is on \$100,000 of road and \$50,000 of funding bonds. A. J. Smith is County Clerk.

N. C., High Point.—Bids will be received until 7.30 P. M. July 6 by W. P. Pickett, Mayor, for \$60,000 5 per cent. 30-year funding bonds, dated July 15, 1915; denomination \$1000.

N. C., Oxford.—Election ordered for June 19 to vote on \$30,000 Granville county school bonds was called off.

N. C., Roxboro.—\$15,000 5 per cent. 30-year bonds for paying off outstanding indebtedness are voted. J. M. O'Brien is Mayor.

N. C., Maxton.—Bids will be received until noon July 15 for \$20,000 6 per cent. coupon school bonds. U. C. McNair is Secy. and Treas. Maxton Special School Dist. Further particulars will be found in the advertising columns.

N. C., Roxboro.—All bids received June 25 for \$75,000 5 per cent. 20-year \$1000 denomination Roxboro township road-improvement bonds were rejected. R. A. Burch is Secy. Highway Commrs., Person county.

N. C., Selma.—Election will soon be held to vote on \$40,000 Selma School Dist., Johnston county, building bonds. Address Board of Trustees.

N. C., Weathersville.—Bids were received until noon June 28 for \$12,000 6 per cent. 30-year bonds; \$5000 to be used for street improvements; \$7000 to liquidate floating indebtedness. W. S. Mick is Clerk.

Okla., Boswell.—\$14,000 light-plant bonds are voted and sold. Jas. T. George is City Engr.

Okla., Chandler.—\$5000 water-works bonds are voted. Address The Mayor.

Okla., Clinton.—\$30,000 5 per cent. school bonds offered June 17 were purchased by E. J. Edwards of Oklahoma City. P. G. Newkirk is Secy. Board of Education.

Okla., Jnes City.—Election is to be held to vote on water-works and electric-light bonds. Address Board of Trustees.

Okla., Jones City.—Election is to be held to July 27 to vote on \$17,000 5 per cent. 5-40-year road, bridge and street bonds. H. C. Innis is Mayor and A. A. Ames, City Clerk.

Okla., Newkirk.—Election is soon to be held in Kay county to vote on \$85,000 courthouse bonds. Address County Commrs.

S. C., Bluffton.—School bonds are voted by Bluffton School Dist. Address Supt. Riser.

S. C., Blaney.—\$7000 of the \$8000 5 per cent. 20-year school district No. 12 bonds, voted June 18, are to be sold now. Address J. T. Ross.

S. C., Cheraw.—Bids will be received until July 15, inclusive, for \$25,000 5 per cent. 5-30-year road-improvement bonds. Address Edward McVey, Cheraw. G. A. Sherrill is Chrmn. Board of Public Works. Further particulars will be found in the advertising columns.

S. C., Greenville.—\$100,000 street-paving and sidewalk, \$25,000 sewer and \$8500 refunding 5 per cent. 30-year bonds have been purchased by R. M. Grant & Co., New York, at a premium of \$3484.35.

Tenn., Chattanooga.—Seasongood & Mayer of Cincinnati have bought the \$165,000 of 4½ per cent. 30-year \$1000 denomination funding debt bonds, dated July 1, at par and interest. Jesse M. Littleton is Mayor.

Tenn., Cleveland.—Bids are being received by Elmo Bartlett, City Recorder, for \$76,000 sewerage and \$15,000 city hall 5 per cent. 10-35-year \$500 bonds.

Tenn., Columbia.—Maury county will probably issue \$300,000 road bonds. Address County Commrs.

Tenn., Henderson.—J. T. Galbreath, Mayor, informs the Manufacturers Record that the \$57,000 water-works, light and sewer bond election recently held was not in proper

[For Additional Financial News, See Page 74.]

Merchants-Mechanics National Bank

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THE GENERAL AUDIT

The month of July would make the ideal time for an audit. Many firms close their fiscal year at June 30, and naturally desire the correct status of their business at the closing date.

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OF BALTIMORE, MD.

Hopkins Place, German and Liberty Sts.
Capital, \$1,500,000.
March 30, 1915, Surplus and Profits, \$850,000.00.
OFFICERS.

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SUMMERFIELD BALDWIN, Vice-Pres.
R. VINTON LANSDALE, Cashier.
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Accounts of Mercantile Firms, Corporations, Banks, Bankers and Individuals invited.

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United States Depository and Disbursing Agent.
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Surplus and Undivided Profits - 40,000
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form and that the bonds cannot be issued or sold.

Tenn., Byrdstown.—Election is called to vote on \$50,000 Pickett county road bonds. Address County Comms.

Tenn., Jamestown.—Bids will be received until noon July 3 by Arthur Gernt, Secy. Pike Comms. Pentress County, for \$150,000 5 per cent. 20-40-year \$500 denomination road bonds.

Tenn., Knoxville.—Bids are being received for \$26,000 30-year refunding bonds. D. G. Leahy is Recorder.

Tenn., Knoxville.—\$5854.91 of street-improvement bonds have been purchased by J. C. Mayer & Co., Cincinnati, at \$8867.19 and accrued interest.

Tenn., Mount Airy.—\$50,000 Sequatchie county road-construction bonds will probably be issued. Address County Comms.

Tenn., Park City, P. O. Knoxville.—Ordinance has been introduced in the City Council providing for an issue of \$15,000 high school bonds. Address Board of Education.

Tex., Abilene.—Election ordered for July 24 on road bonds in this (Taylor) county as follows: Precinct 2, at Merkel, \$150,000; Precinct 3, at Buffalo Gap, \$50,000. Address County Comms. at Abilene.

Tex., Anderson.—Austin Bros., Dallas, Tex., have purchased at par \$50,000 5 per cent. 10-40-year Road Dist. No. 2, Grimes county, road bonds.

Tex., Austin.—Bids will be received until July 7 by A. P. Wooldridge, Mayor, for \$725,000 5 per cent. 20-year serial street, sewer, school and bridge \$1000 bonds; dated July 1, 1915.

Tex., Austin.—Attorney-General has approved securities thus: \$2000 of 5 per cent. 10-year bonds of Limestone County School Dist. 46; \$15,000 5 per cent. 20-year bonds Montgomery County Road Dist. No. 1; \$17,000 5 per cent. 20-40-year bonds El Paso County Common School Dist. No. 4; \$74,000 5 per cent. 10-40-year Hemphill county bridge bonds; \$15,000 5 per cent. 20-40-year bonds Godley Independent School Dist., Johnston county.

Tex., Beeville.—Election July 12 on \$15,000 of 5 per cent. 10-30-year \$500 denomination sewer-extension bonds. W. G. Gayle is City Clerk.

Tex., Brownwood.—\$8000 sewer and \$7000 school 5 per cent. 40-year bonds have been purchased by N. W. Halsey & Co., Chicago.

Tex., Burton.—\$6000 bonds School Dist. No. 23, Washington county, are voted. W. R. Ewing is County Judge at Brenham.

Tex., Canadian.—\$74,000 5 per cent. 10-40-year Hemphill county \$1000 denomination bridge bonds, dated July 1, 1915, are being offered for sale. Address J. L. Jennings, Judge Hemphill County.

Tex., Cuero.—\$30,000 Cuero Drainage Dist., DeWitt county, bonds have been purchased by a Cincinnati firm. R. J. Waldeck is County Judge.

Tex., El Paso.—Election July 27 on \$750,000 of El Paso county road bonds. Address County Comms.

Tex., Howe.—Howe precinct, Grayson county, has voted \$60,000 road bonds. Address County Comms. at Sherman.

Tex., Johnson City.—\$30,000 of Blanco county courthouse bonds voted. Address County Comms.

Tex., Jourdan.—Bids will be opened July 17 for \$10,000 6 per cent. 10-40-year \$500 street-improvement bonds, dated May 5, 1915. H. C. Herrick is City Secy.

Tex., Littlefield.—\$15,000 Littlefield Dist. school bonds have been sold. Address Board of Education.

Tex., Mineral Wells.—Election is to be held to vote on \$74,000 water-works bonds. Address The Mayor.

Tex., Moore.—Steps are being taken to call an election to vote on \$10,500 of bonds to construct school building. Address Board of Education.

Tex., Nacogdoches.—July 10 election is to be held to vote on \$60,000 5 per cent. 40-year Nacogdoches Independent School Dist. bonds. Address Board of Trustees.

Tex., Nixon.—Election called for June 19 to vote on \$15,000 school-improvement bonds is postponed indefinitely. P. H. Tom is Secy. Board of Education.

Tex., Oakville.—\$40,000 5½ per cent. 10-20-year bonds Road Dist. No. 4, Live Oak county, have been sold to W. T. Montgomery, San Antonio, at par.

Tex., Orange.—\$25,000 bonds Precinct No. 3, Orange county, road bonds defeated.

Tex., Palestine.—The \$100,000 5 per cent. 10-40-year school bonds to be voted on July 2

are dated July 14, 1915; denomination \$500. Geo. A. Wright is Mayor.

Tex., Port Lavaca.—\$60,000 5 per cent. 10-40-year bonds Road Dist. No. 1, Calhoun county, have been purchased by E. A. Toebeleman of Galveston, Tex.

Tex., Rockwall.—\$25,000 Rockwall county road bonds are voted. Address County Commissioners.

Tex., Robstown.—\$158,000 Robstown Drainage Dist., Nueces county, bonds are voted. Address County Comms. at Corpus Christi.

Tex., Victoria.—\$60,000 of an issue of \$100,000 5 per cent. 10-40-year \$500 denomination fire-station and street-improvement bonds, dated July 1, 1915, will soon be put on the market. Address J. H. Fleming, Mayor.

Tex., Victoria.—\$190,500 bonds Victoria County Drainage Dist. No. 3 are voted. Address Comms. Court Victoria County.

Va., Covington.—\$25,000 5 per cent. 20-year \$500 denomination water system-improvement bonds have been purchased by W. H. McConihay, Covington, at par. J. H. Overholt is Clerk of Council.

Va., South Boston.—\$17,000 South Boston School Dist. bonds have been sold. J. O. Watkins is Clerk School Board.

W. Va., Ashland.—Election is to be ordered to vote on \$125,000 city hall, jail and market-house bonds. Address The Mayor.

W. Va., Grantsville.—All bids received June 7 for \$10,000 water and sewer 6 per cent. 10-34-year bonds were rejected. S. T. Waldo is Recorder.

W. Va., Hinton.—Election is to be held in Summers county July 31 to vote on \$150,000 6 per cent. 32-year Greenbrier Dist. road bonds. Address County Comms.

W. Va., Keyser.—Bids will be received until noon June 26 by L. B. McCoolle, Secy., for \$30,000 5 per cent. \$500 and \$1000 Keyser School Dist. Bldg., Mineral county, bonds.

W. Va., Wheeling.—Another election is declared necessary on the \$50,000 school bond issue of Richland Dist. of Ohio county which was voted January 26 last, a technicality having been omitted. Address County Comms. at Wheeling.

FINANCIAL NOTES

The South Carolina Building and Loan League, in annual convention at Columbia, elected the following officers for the next year: Prest., William M. Shannon, Camden; V.-Ps., E. O. Black, Columbia, and M. A. Moore, Union; Secy. and Treas., B. M. Spratt, Chester. Next year the convention will be held at Chick Springs, S. C.

Officers for the next year were elected by the annual convention of the North Carolina Building and Loan League at Asheville, N. C., as follows: Prest., E. L. Keesler of Charlotte; first V.-P., W. E. Sharpe of Burlington; second V.-P., G. R. Woolen of Hickory; third V.-P., J. B. James of Greenville; Secy. and Treas., A. G. Craig of Charlotte. Next year the convention will meet at Greenville, S. C.

The Maryland Bankers' Association, which held its annual convention last week at Cape May, N. J., elected officers for the ensuing year as follows: Prest., Harvey L. Cooper of Denton; first V.-P., James M. Sloan, Lonaconing; additional V.-Ps., Harry J. Hopkins, Annapolis; Townsend Scott, Baltimore; G. W. Waters, Jr., Laurel; Robert B. Dixon, Easton; Samuel M. Hann, Baltimore; J. P. Rolph, Centerville; W. W. Beck, Chestertown; Secy., Chas. Hann, Baltimore; Treas., William Marriott, Baltimore.

Cotton Exports from Galveston.

Cotton continues to roll in and out of Galveston at a fair slack season rate, the exports just about keeping up with the receipts, and leaving the large stocks here generally untouched. Five vessels from Galveston this week have carried transatlantic exports valued at approximately \$3,500,000, with cotton the largest single item, and with metals forming another of the larger items. Five other steamers are receiving cotton at the wharves. Approximately half a dozen are due for the early part of July loading.

The exports of the week, in detail, have been on the following vessels: Urna, for Bordeaux, 48,000 bales of hay; Wilberforce, for Barcelona, 183,000 bushels of wheat; Kronstad, for Havre, 13,993 pigs of lead, 65,076 plates of spelter, 1383 bales

of cotton linters and 6831 bales of cotton; Pio IX, for Barcelona, 3100 square bales of cotton and transit; Ventura de Larinaga, for Manchester, 8488 bales of cotton, 3577 pieces of pine lumber, 20,732 pieces of steel sheet bars, 612 pieces of oak lumber, 1164 barrels of paraffine scale and 128,000 bushels of wheat.

One of the five vessels that departed this week was among the three arrivals. Two others are in port, now taking on their cargoes. They are the Logician, of 3162 tons, and the Harbury, of 2778 tons.

Receipts of the week have been 9166 bales of cotton, and the total receipts for the season now lack but 44,715 bales of the 4,000,000 mark. To date there have been received at Galveston 3,955,285 bales, against 3,520,969 bales at the same time last year. Wheat receipts have picked up rapidly during the week, amounting in all to 256 cars. They are expected to increase rapidly from now on until the rush season.

Stock in Galveston today amounts to 172,361 bales, against 81,145 bales last year. A total of 137,690 bales are in compresses and depots, against 58,573 bales at the same time last year. There are today on shipboard and not cleared for Great Britain, 21,154 bales, against 3568 bales last year; 9517 bales for other foreign ports, against 17,398 last year, and 4000 bales for coastwise ports, against 1606 bales at the same time last year.

Interest in the cotton situation centers on the crop condition report due July 1. Most dealers believe that it will not show much change from the one of last month (80) and the 10-year average of 79.9, but there is yet to be heard the report on acreage and the lack of fertilizer. Most of the guesses on the acreage reduction place it at between 10 and 15 per cent., and figures lower or higher than those will be a shock to the trade generally.—Galveston News.

Florida Wool.

In one of his talks to business men at the luncheon at the Mason, George Mason stated as a fact that wool grown in Florida commands a price from 10 to 12 cents higher than the wool grown in any other section of the country, and that it is in greater demand than any other wool grown, and, further, that there are some large herds of sheep in this State that are producing great profits for their owners in the wool they produce every year.

In three important items, then, in making clothing—the clothing of the future—Florida leads the balance of the country; the three items are the fine texture of her wool, her cotton and her wood fiber, and wood fiber is coming into use more and more every year in the manufacture of fine cloths.

But the difficulty with all these lines are that they are not developed in this State. For instance, while there are a few fine herds producing fine wool, there are not enough of them to make us known as a wool-growing State nor to bring in

a large revenue. The same is true of our Sea Island cotton. We grow the quality, and it is in great demand at double the price of ordinary cotton, and yet we do not grow enough of it to make it a notable crop or a large producer of revenue. And in wood fiber the condition is that of absolute underdevelopment.

The yellow pine of this State has been tried out in chemical laboratories and in practical plants for making craft paper, from which is made many things in fine cloths, and the fiber is found to be more dense and of greater strength than that of any other wood in America, and it can be made out of what Florida has hitherto wasted—the tops and limbs of trees, and the trees destroyed, that are not large enough for lumbering purposes.

Here, then, are three items, all of which could be made into great money producers in Florida if they were developed. We need only the people to develop them and add millions to the income of Florida every year. As a matter of fact, if these three were developed to their fullest extent, they alone would bring in many more millions than everything we produce in the State today.

And yet Florida waits and pessimists talk of hard times and poor business!

Mr. Mason has started something. Every man in Florida ought to join him in keeping it going.—Florida Metropolis.

Exposition of Chemical Industries.

The National Exposition of Chemical Industries, which will be held at New York during the week of September 20 next, is the first comprehensive effort in this direction. Expositions have been held in the past at various places on the continent of Europe and invariably with great success, but never before has an exposition of this kind been effected in America. Many new processes and apparatus are already proposed to receive their first introduction to the visitors to this exposition that will be of interest to many industries. The scope of this exposition will be very broad, and many different industries will find themselves represented. Charles F. Roth and Adriaan Nagelvoort are the managers.

A Natural Gas Offer.

Greater Muskogee Association,
Muskogee, Okla., June 19.
Editor Manufacturers Record:

The Greater Muskogee Association has just completed negotiations whereby it is enabled to offer natural gas to manufacturers who consume large quantities at 5 cents per thousand cubic feet, particularly smelters and glass manufacturers. There is an abundance of silica sand and other raw material immediately adjacent.

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Then Send for a Copy of This Booklet



It will show you just how to reach contractors in all parts of the South and Southwest just when they are securing contracts and are in the market for all kinds of machinery, equipment and supplies.

This pamphlet contains direct statements from Southern contractors, which you will find of real value in studying the sales possibilities for you in the South.

Here is a section where construction work goes on every month in the year.

It's a year round sales field that justifies your closer cultivation, because it means good business in a constantly growing market.

A careful study of this pamphlet will show you how to increase your Southern sales.

Southern Contractors

Published by
Manufacturers Record
Baltimore, Md.

Many Inquiries Have Been Received for this Booklet. Have You Written for Yours?

MANUFACTURERS RECORD
Baltimore, Md.

Without any obligation on my part, please send me a copy of your pamphlet, "Southern Contractors."

Name.....

Business.....

Address.....

Classified Opportunities

MINERAL AND TIMBER LANDS WATER POWERS MISCELLANEOUS PROPERTIES

MINING PROPERTY FOR SALE.—Ruby and commercial corundum deposits, china clay deposits, mica mines, copper and gold deposits. Anyone interested address Charley C. West, Box 115, Franklin, N. C.

5400 ACRES virgin hardwood timber land in East Tennessee; price \$10 per acre. About 300-horse water-power, with 80 acres and improvements, on pike close to Birmingham, Alabama; price \$10,000. Farm Realty Co., 828 Jefferson Co. Bank Bldg., Birmingham, Ala.

HAVE YOU A VALUABLE PROPERTY FOR SALE? Farm, timber land, mineral property or any other? We can help you get in touch with possible purchasers by an advertisement in these columns. For rates see head of this department.

OILSTONE QUARRY

FOR SALE OR LEASE.—Oilstone quarry and rock-crushing plant on Rumble street, this city; quarry and plant in good condition for operation; finest bed of oilstone in county; good sale for crushed rock in city; a money-making opportunity for practical man. R. L. Millsaps, Hot Springs, Ark.

ZINC AND LEAD LANDS

RICH ZINC AND LEAD LANDS FOR SALE in Boone, Marion, Newton counties, Arkansas, and Taney county, Missouri; 3584 acres selected 15 years ago in the richest mineral belt by competent prospector and experienced zinc miner. Address C. M. Fenton, Zinc, Arkansas.

COAL LAND

3300 ACRES CANNEL COAL, East Tennessee; new operation; 25 houses; commissary; modern equipment. \$30,000. O. Rooker, Louisville, Ky.

COAL LAND FOR SALE.—1116.15 acres coal and timber land in W. Va.; 48-inch vein; no parting; also Pocahontas No. 3 vein. A great bargain. Sam'l B. Woods, Charlottesville, Va.

TIMBER

FOR SALE.—Cutting rights over 190,000 acres of easily worked, accessible forest land; 60,000 acres heavily timbered, and 40,000 acres very heavily timbered, averaging over 35,000 super-feet to acre. A total of over 1,000,000 super-feet of first-class hard and soft woods. Inspection by expert cruisers is solicited. For further particulars apply to F. W. Frankland, Marguerite Place, Lake Charles, La.

TIMBER LAND

FOR SALE.—Several desirable pieces of timber at bargain prices. If you are in the market and want a money-maker, write George J. Philip, Box 42, Oil City, Pa.

YELLOW PINE TIMBER FOR SALE.—One very large tract, two medium size and several small locations, all in Florida. Chas. B. Harman, Gainesville, Fla.

960 ACRES timber land, 2,000,000 feet cypress and 3,000,000 feet hardwoods, ash, gum, oak, etc., on the Gulf coast of Florida; eight miles from R. R.; soil hammock and muck, very rich; fine timber. Will take \$6.50 per acre. Title good. I am the owner. If interested, write D. S. Register, Perry, Fla.

FRUIT, FARM AND TRUCK LANDS

MONEY INVESTED IN CHOICE SOUTHERN LAND will earn big dividends. Ask Johnson & Tutt, 833 N. Y. Life Bldg., Kansas City, Mo.

THESE COLUMNS ARE CLOSELY READ BY PEOPLE for information of all kinds about Southern properties of every description. If you have a property of any kind that you want to dispose of, try an advertisement in these columns. Others have to their advantage. For rates see head of department.

ALABAMA

FOR SALE OR EXCHANGE.—An old-time Southern plantation near Miss. line on Tombigbee River; 2600 acres of land; 1400 in cultivation, level, rich and productive. Fine old colonial home of 12 rooms. This is one of the best improved farms in the South. Price \$30 per acre on any reasonable terms. Part exchange in city property considered. Bailey-Jones Real Estate & Ins. Co., 221 N. 21st St., Birmingham, Ala.

GOOD INVESTMENT.—We offer for sale 13,000 acres of best farm, fruit and stock-raising land in solid body, situated only a short distance from Bay Minette in Baldwin county, Alabama.

This land lies well, being level to slightly rolling, with several streams of running water through the tract, making it very desirable for colonization purposes. This tract can be purchased for the low price of \$7 per acre. Will arrange terms. T. L. Moore & Co., Room 109 Masonic Temple, Mobile, Alabama.

RATES AND CONDITIONS

Rate 20 cents per line per insertion. Minimum space accepted, four lines. Maximum space accepted, 25 lines. In estimating the cost, allow seven words of ordinary length to a line. When the advertisement contains a number of long words, proper allowance should be made. Terms: Invariably cash with order; check, postoffice or express order or stamps accepted. No display type used. Questionable or undesirable advertisements will not be accepted. The assistance of our readers in excluding undesirable advertisements is requested. We reserve the right to refuse any advertisement. No patent medicine, whiskey or mining stock advertisements accepted. Rate for special contracts covering space used as desired within one year as follows: 100 lines, 18c. per line; 300 lines, 15c. per line; 500 lines or more, 13c. per line.

FLORIDA

FREE.—William L. Larkin's booklet, "The Truth About Florida," with a six-months' subscription (at one-half regular rates) to The Indian River Farmer. Fruit growers, truckers, general farmers, folks interested in Florida, send 25c. to The Indian River Farmer, V-1, Vero, Fla.

CHOICE citrus and truck lands for sale in the Manatee River section of Manatee County, Florida; also water fronts. Send for soil survey report and views. Manatee River Land Co., Inc., 101½ Franklin St., Tampa, Fla.

FLORIDA.—5000 acres cut-over land lying between Lake Crescent, Lake Louise and Lake George, in Putnam and Volusia counties, traversed by main line of A. C. L. Railway; large portion especially adapted to orange and grapefruit culture; balance finest potato and general farming land; lands all round selling \$30 to \$100 per acre. My price, \$10 per acre in a body; terms. Correspondence solicited. Chas. A. Brown, Jr., 30-31 Buckman Building, Jacksonville, Fla.

GEORGIA

FOR SALE IN GEORGIA.—Stock farm, 2300 acres, all fenced; 500 head of good cattle; 30 miles from large city on R. R. Price \$14 per acre, including cattle. A bargain. Brewster Lumber Co., Savannah, Ga.

VIRGINIA

IN THE VALLEY OF VIRGINIA.—Come to Augusta county, the wealthiest and most progressive in the State. The home of the red apple. Blue grass stock farms and orchards my specialty. J. F. Tannehill, Staunton, Va.

VIRGINIA ESTATES.—Colonial homes, plantations, farms, suburban homes, Albarie pippen orchards, timber lands. Write us for what you want. We have it. R. N. Flanagan & Co., Charlottesville, Va.

ESTABLISHED 1893.—From long experience we are thoroughly familiar with lands and values and have some genuine bargains listed. Tell us what you want and let us submit some special offerings. Southern Farm Agency, Lynchburg, Virginia.

BUSINESS OPPORTUNITIES

FOR SALE OR TRADE.—A going eye-hoe factory; will inventory \$30,000; will sell for cash or take one-half cash and balance in improved Southern land. For further particulars address L. E. Fricke, Cashier North Side Bank, Evansville, Ind.

WANTED.—Large farms and plantations, timber and coal and other mineral lands; also city or country income and investment properties for sale and exchange. Have constant demand all sections, owners or exclusive agents. What have you? Send full details at once. Arthur M. Connor, 223-224 Oxford Bldg., Washington, D. C.

FOR SALE.—FURNITURE MANUFACTURING PLANT. Good mill and water transportation. In growing section of Florida. No competition. Owners desire practical man with \$5000 or \$10,000 to invest to take charge of plant. The market is here for the goods. Native hardwoods are near. Magnificent hardwoods of Central America can be secured less than any port in this country. James G. Yeats, Port Tampa City, Fla.

FOR SALE, IN WHOLE OR CONTROL.—A well-established general merchandise business, located in famous Piedmont section of Virginia; business incorporated; annual sales, \$35,000 to \$40,000; in small country village; good farming trade; village also adjacent to large quarrying operation with annual payroll of \$50,000; no commissary. Should be very attractive to a good merchant who wishes a big business in a good healthy country location. Address No. 1775, care Manufacturers Record, Balto., Md.

WE HAVE PYRITE mining property; shaft down 107 feet. The best practical man in the mineral belt in charge of it and is prospecting the outcrop, which is showing up fine. Now is the time to come with us for big profit. Good opportunity. Good men only wanted. Address Samson Smith, Mineral, Virginia.

\$500 STOCKS you in business, in which a man started with \$75 and cleared \$112.50 in three months. Write before someone else gets your territory. Frick Mfg. Co., Fricks, Pa.

A CONVERTIBLE INVESTMENT.—Reliable party requires \$10,000 capital in realty development near Washington. Exceptional opportunity for safe investment earning 6 per cent. plus half the profits. Write for particulars. Johnson's Realty Exchange, 926 Pennsylvania Ave. N. W., Washington, D. C.

SOUTHERN HOME

FOR SALE.—A magnificent Southern home. Ideally located for winter home; all conveniences. Part cash; balance long term. Winter mild; no snow. Farmers' Land Loan & Title Co., 145 Pine St., Albany, Ga.

HOTEL FOR SALE

HOTEL FOR SALE.—One-half interest in an old-established hotel property located in Richmond, Virginia; good investment. For further information address Caskie G. Burch & Co., Investment Brokers, Richmond, Va.

FLORIDA HOTEL.—Elegantly furnished 22-room hotel, located in orange section of Florida, for sale. Will sell on payments like rent, or exchange for good property. Box 614, Lakeland, Fla.

FINANCIAL

EIGHT PER CENT. NET.—Eight per cent. net to the investor; money secured by first mortgage on improved Tampa real estate based on a forty to sixty per cent. valuation. Thos. C. Hammond & Co., 4 and 5 Giddens Bldg., Tampa, Fla. Reference, any bank.

WANTED.—Mortgage loan of sixty thousand dollars on land on Eastern Shore of Virginia, worth one hundred and fifty thousand dollars. Near railroad and under cultivation. For further details address No. 1781, care Manufacturers Record, Balto., Md.

COLLEGES AND SCHOOLS

RENSSELAER POLYTECHNIC INSTITUTE, TROY, N. Y.—Courses in Civil, Mechanical, Electrical and Chemical Engineering and General Science, leading to the degree of Civil Engineer (C.E.), Mechanical Engineer (M.E.), Electrical Engineer (E.E.), Chemical Engineer (Ch.E.), and Bachelor of Science (B.S.). Also special courses. Splendidly equipped new engineering laboratories. Send for catalogue to Registrar.

INTEREST IN COAL-MINING COMPANY FOR SALE

AN UNUSUAL OPPORTUNITY to secure an interest in a splendidly equipped operation in the Pocahontas field, working the original No. 3 seam, 5 feet thick. The management is in the hands of the wealthiest and most successful operators in the field. Over \$400,000 has been spent on the improvements, and the works have never lost a day for want of orders. The large stockholders and directors represent a tonnage of several millions annually and a wealth of many millions of dollars.

Particulars as to the directors and stockholders will be furnished to bona-fide interested parties. The unusual conditions prevailing for the past year compels the owner (a non-resident) to sacrifice the stock, which will be sold for \$50 per share, par value \$100, and it cost that. Terms easy; \$10 per share down and \$10 per share per month. Certificates in one-share lots or any number. Brokers protected. Address No. 1684, care Manufacturers Record, Balto., Md.

PATENT ATTORNEYS

EUGENE C. BROWN, ENGINEER AND PATENT LAWYER. Suite 40 Victor Bldg., Washington, D. C. Graduate Engineer, Lehigh University. Member Bar U. S. Supreme Court. Patents and Trade-Marks. Inventions considered from an engineering standpoint to determine their breadth in covering equivalent constructions and extent of monopoly, and from a legal standpoint in framing adequate claims to protect such monopoly against infringement. Over 25 years devoted exclusively to patent matters; over 9 years Examiner in U. S. Patent Office. Patents secured; infringement suits conducted in all courts; reports upon validity, scope and infringement of patents; send sketch and description of invention.

MONEY IN PATENTS.—I secure your patent or return my fee. Manufacturers want Mills patents. Write for free booklet, "How to Get Your Patent and Make Your Profit Thereon." I assist in selling your patent. Mansell F. Mills, Registered U. S. Patent Attorney, 252 Com. Nat. Bank Bldg., Washington, D. C.

PATENTS THAT PROTECT AND PAY. Advice and books free. Highest references. Best results. Promptness assured. Trade-marks registered. Watson E. Coleman, Patent Lawyer, 624 F St., Washington, D. C.

VALUABLE INVENTIONS justify only best legal service. Consult Vernon E. Hodges, Attorney-at-Law, Barrister Bldg., Washington, D. C. Practice before the U. S. Supreme Court; all Circuit Courts; Courts of the District of Columbia, and the U. S. and Foreign Patent Offices exclusively. Continuous practice since 1886. Extensive experience with all classes of invention, representing lawyers, manufacturers and inventors in every State.

EDWARD BRUCE MOORE, sole office, 159 Barrister Building, Washington, D. C. Head of United States Patent Office and Commissioner under Presidents Roosevelt, Taft and Wilson, and Assistant Commissioner under President McKinley. Do not waste money for patents procured by unknown and incompetent attorneys. They are worthless, and manufacturers and inventors will not buy them nor do they fully protect your invention. Consult an expert known throughout the patent world. A known attorney's name on your patents adds value. Costs no more to be safe.

"WORDS OF VALUE TO INVENTORS" sent free; should be carefully read before applying for patents. John R. Woodworth, Registered Atty., Ward R. Wash., D. C.

PATENT YOUR IDEAS.—\$9000 offered for certain inventions; book, "How to Obtain a Patent" and "What to Invent," sent free upon request; send rough sketch for free report as to patentability. We advertise your patent for sale at our expense. Chandler & Chandlee, patent attorneys, 973 F St., Washington, D. C.

C. L. PARKER, Patent Lawyer, formerly member Examining Corps, U. S. Patent Office, 924 G St., Washington, D. C. Patents secured. Patent suits conducted. Reports on the patentability of inventions, the scope and validity of patents, and whether any process of machine infringes existing patents. Reference to prominent manufacturers and pamphlet of instruction furnished upon request.

PATENTS.—Herbert Jenner, patent atty. and mechanical expert, 606 F St., Washington, D. C. I report free of charge if a patent can be had and its exact cost. Send for circular.

PATENTS secured or Fee returned. Send sketch for free report as to patentability. Guide book and what to invent, with valuable list of inventions wanted, sent free; \$1,000,000 offered for inventions. Patents secured by us advertised free in World's Progress; sample free. Victor J. Evans & Co., 12 Ninth St., Washington, D. C.

INDUSTRIES WANTED

MISCELLANEOUS

WATER and railroad facilities can be had here. Labor is plentiful. The best of schools, churches and shipping facilities. We have an attractive proposition to new industries. If interested, write us, Pocomoke City Board of Trade, Pocomoke City, Md.

WEST POINT, VIRGINIA, OFFERS TO MANUFACTURERS natural advantages that will offset a big per cent. of bonuses offered by other cities not so well located. It will pay you to investigate before locating. Chamber of Commerce.

LOCATE YOUR PLANT IN MARION, NORTH CAROLINA. Complete railway facilities. Raw material. Cheap fuel. Good labor. Ideal climate. For further particulars address The Board of Trade, Marion, N. C.

Classified Opportunities

WEBSTER, SUMTER COUNTY, FLORIDA.—located in the heart of Florida's best vegetable and trucking section, needs a good commercial hotel, ice factory and electric light plant. To the party who has some capital, free building sites will be donated and some stock subscribed locally. For further information address C. L. Richardson, Jr., Webster, Florida.

FACTORY SITES

BALTIMORE FACTORY AND TERMINAL SITES.—Statement of Asa G. Candler, President The Coca-Cola Co.: "Investigation convinced us that Baltimore is not only the commercial metropolis for Southern trade, but that it affords shipping opportunities both by water and rail for domestic and foreign traffic superior to any of the great cities in any section of the United States." Locate in Baltimore and derive these advantages. We can provide accommodations to meet your requirements. Wm. Martien & Co., 3 N. Calvert St., Baltimore, Md.

INDUSTRIAL PLANTS FOR SALE

FACTORY BUILDING
VALUABLE FACTORY FOR SALE, situated at railroad station in Snow Hill, and having freight shed by main tracks, including lot one acre in size. Two-story brick building, 105'x42', steam heated and lighted by its own gas plant, engine and boiler in engine-house, and all other necessary buildings. All ready to operate. Will be sold for sacrifice price. For full information apply to James B. Whaley, Snow Hill, Md.

MODELS

MODELS MADE FOR INVENTORS.—General machine work. Designing and perfecting. Developing automatic devices and machinery. In a position to do all kinds of light tool and machine work. Prices reasonable. Estimates cheerfully given. Ideal Machine Works, 64 Ann Street, New York City.

MANTELS AND TILE FLOORS

NORTHCROSS WOOD MANTELS AND TILE FLOORS for every purpose. Sold direct from factory to your home. All orders receive prompt attention. Every contractor should have a copy of our new catalog showing the largest line in America. Mailed free. W. J. Northcross Mantel Company, 73 Union Ave., Memphis, Tennessee.

MEN WANTED

IF QUALIFIED for executive, technical, mechanical, professional or administrative position carrying salary between \$2500 and \$12,000, write undersigned counsel, through whom strictly confidential preliminaries will be negotiated for important appointments. Send address only for prefatory details. R. W. Bixby, E 1 Niagara Square, Buffalo, N. Y.

WANTED—Foreman for factory doing wood, sheet metal and some iron work; must be good mechanic; should be willing to take small financial interest in prosperous Southwestern institution. Address No. 1780, care Manufacturers Record, Balto., Md.

ARE YOU LOOKING FOR A GOOD MAN? There are a number looking for you. You can get together through an advertisement in these columns. Try it. For rates and other information see block at head of department.

AGENCIES WANTED

WANTED—Sales agency for all lines pertaining to builders' specialties; East Tennessee as territory; can furnish satisfactory references to interested concern; modern warehouse facilities. Address Daniel Briscoe, Jr., 325-327 State St., Knoxville, Tenn.

SITUATIONS WANTED

A YOUNG MAN who can design, draw, figure and sell; handle men and work; a thorough, practical mechanic, with a wide experience in plate and structural steel work in both shop and office. I can give you results. Address No. 1779, care Manufacturers Record, Balto., Md.

LETTERHEADS, PRINTING, ETC.

LITHOGRAPHED Letterheads: at low cost—5000, \$2 per M; 10,000, \$1.75 per M; 25,000, \$1.40 per M. Nominal engraving charge on list order; quality guaranteed. Write for samples on your own letterhead. Monach Lithographing Co. (Dept. E), Minneapolis, Minn.

EMBOSSED LETTERHEADS, bond paper, 1000, \$3.75. Sample book free. Turner & Dunlap, Wilkes-Barre, Pa.

\$1.50, 1000 BOND LETTERHEADS; 5000, \$6. Billheads, statements, envelopes and tags, same price. Send for samples. A. W. Beveridge & Co., 111 Mercer St., Balto., Md.

5000 LITHOGRAPHED letterheads, \$13.75; good bond paper; quality guaranteed; no charge for engraving; samples upon request. The Art Press, Dept. A, Lima, Ohio.

"ARISTOCRAT" fine business letterheads. Printed, 1000, \$2.50; 5000, \$3.75. Lithographed, 5000, \$10.00; 10,000, \$17.50. Sample portfolio free. L. S. Frank Adv. Mfg. Co., 725 Locust St., St. Louis.

MACHINERY AND SUPPLIES

GRANULATED CORK

FOR SALE—50 tons pure granulated cork, cheap. Apply New Orleans Cold Storage & Warehouse Co., Ltd., New Orleans, La.

EXCAVATOR

FOR SALE—One second-hand excavator or dredging machine in good condition; has almost new 15 cu. ft. orange-peel bucket; can be successfully operated on wheels, skids or flatboat. Will sell cheap for cash, or will give terms to responsible parties. Call on or address B. H. Wilson, New Smyrna, Fla.

PROPOSALS

BOND ISSUES

BUILDINGS

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GOOD ROADS

PROPOSALS FOR GALVANIZED STEEL. Steel Billets, Rivets, Bolts, Nuts, Washers, Boat Spikes, Missing Links, Steel Cable, Electric Cable, Brass Wire, Chisels, Sheet Brass, Bronze Bars, Brass Tubing, Copper Tubing, Solder, Shovels, Wheelbarrows, Jacks, Snatch Blocks, Counter Brushes, Paintbrushes, Lights, Electric Light Clusters, Window Glass, Cocks, Hose, Packing, Asbestos Gaskets, Rubber Valves, Rubber Stoppers, Boiler Lagging, Canvas, Sheetmetal, Cheesecloth, Oilcloth, Manila Rope, Sash Cord, Oakum, Leather Belting, Leather, Emery Cloth, Sandpaper, Chamolli Skins, Tile Duct, Candles, Calcium Carbide, Lump Chalk, Metal Polish, Soap Polish, Soap, Lye, Record Books, Rubber Bands, Paper, Index Cards, Manila Tags, Toilet Paper, Windows, and Cypress Lumber. Sealed proposals will be received at the office of the General Purchasing Officer, The Panama Canal, Washington, D. C., until 10.30 A. M. July 16, 1915, at which time they will be opened in public, for furnishing the above-mentioned articles. Blanks and general information relating to this Circular (No. 943) may be obtained from this office or the offices of the Assistant Purchasing Agents, 24 State Street, New York City; 614 Whitney-Central Building, New Orleans, La., and Fort Mason, San Francisco, Cal.; also from the U. S. Engineer Offices in the following cities: Seattle, Wash.; Los Angeles, Cal.; Baltimore, Md.; Philadelphia, Pa.; Pittsburgh, Pa.; Boston, Mass.; Buffalo, N. Y.; Cleveland, Ohio; Cincinnati, Ohio; Chicago, Ill.; St. Louis, Mo.; Detroit, Mich.; Milwaukee, Wis.; St. Paul, Minn.; Chattanooga, Tenn.; Louisville, Ky.; Mobile, Ala., and Galveston, Tex.; Commercial Club, Kansas City, Mo.; Chamber of Commerce, Quincy, Ill.; Commercial Club, Tacoma, Wash. F. C. BOGGS, Major, Corps of Engineers, U. S. A., General Purchasing Officer.

TREASURY DEPARTMENT, Washington, June 15, 1915. Office of the Secretary. Sealed proposals are invited and will be received at the Treasury Department until 2 o'clock P. M. of Tuesday, August 3, 1915, for the purchase of the Coast Guard Cutter Winona. The Winona is a twin-screw steamer, 400 tons displacement; 148' 6" in length over all; 25' beam, molded; 10' 4" depth of hold; maximum draft, 6' 10"; constructed throughout of iron and has two masts; bunker capacity 63.7 tons. In addition 20 tons can be carried on deck. She has one single engine, Scotch boiler, 10' 5" diameter, 10' 2" long; 2 furnaces, 30" diameter, 6' 6" long, working pressure 100 pounds; 2 main propelling engines, each having a high-pressure cylinder, 11 9/16" diameter, and a low-pressure cylinder, 20 1/16" diameter, stroke 20"; 2 solid cast-iron pinwheels, 5' 6" diameter and 8' 6" pitch. The Winona is fitted with superheated surface condenser and combined air and circulating pump, 4 diameters, steam cylinder 8", air cylinder 9", water cylinder 9", stroke 10"; 1 duplex independent feed pump, 5 1/2"x3 1/2"x5". Fire pump, 8"x4"x7"; sanitary pump, 3"x2"x3", and evaporator 9" diameter x 5' 8" high. The vessel is lighted by electricity and has a four-pole compound wound General Electric generating apparatus, 3.6 K. W. The Winona may be seen at Mobile, Ala., by applying to her commanding officer, who will furnish all additional information desired. Each bid must be accompanied by a certified check in the sum of five hundred dollars (\$500.00), payable to the order of the Secretary of the Treasury. The purchase money must be paid to the authorized representative of the Government within fifteen days from the date the successful bidder is notified that the Winona is ready for delivery. Any default in this respect will result in forfeiture of the certified check and revocation of the letter of acceptance. It is expected the vessel will be ready for delivery about September 15, 1915. These conditions must be agreed to by each bidder in his written proposal. There is no special form of proposal. The Government reserves the right to reject any or all bids. The proposals should be addressed to the Captain Commandant, U. S. Coast Guard, Treasury Department, Washington, D. C., and indorsed on the envelope "Proposal for the purchase of Coast Guard Cutter Winona." (Signed) BYRON R. NEWTON, Acting Secretary.

TREASURY DEPARTMENT, Supervising Architect's Office, Washington, D. C., June 28, 1915. Sealed proposals will be opened in this office at 3 P. M. July 30, 1915, for supplying to the experimental station, United States Bureau of Mines, Pittsburgh, Pa., one electric generator and generator panel, in accordance with specifications, copies of which may be obtained at this office. In the discretion of the Supervising Architect, JAS. A. WETMORE, Acting Supervising Architect.

TREASURY DEPARTMENT, Supervising Architect's Office, Washington, D. C., June 22, 1915. Sealed proposals will be opened in this office at 3 P. M. August 16, 1915, for the construction (except mechanical equipment, elevator, lifts, and dumbwaiter) of the Immigration Station at Baltimore, Maryland, including pipe tunnels, approaches and wharf. One four-story, one three-story, and two two-story buildings of fireproof construction, with slate, tile and composition roofs; brick faced, with stone base; stone and terra-cotta trimmings; approximately 43,000 square feet total ground area. One wharf 25 feet by 250 feet; wood construction. Drawings and specifications may be obtained after July 9, 1915, from the Commissioner of Immigration, Baltimore, Maryland, or at this office at the discretion of the Acting Supervising Architect, JAS. A. WETMORE, Acting Supervising Architect.

PROPOSAL ADVERTISING INFORMATION

RATE: 20 cents per line per insertion.

PUBLICATION DAY: Thursday.

FORMS CLOSE 9 A. M. Wednesday. Copy received later cannot be published until issue of following week.

NIGHT LETTER: When too late to send copy by mail to reach us by 9 A. M. Wednesday, forward by night letter.

THE DAILY BULLETIN OF THE MANUFACTURERS RECORD

Published every business day; gives information about the industrial, commercial and financial activities of the South and Southwest.

The Daily Bulletin can be used to advantage when copy cannot reach us in time for publication in the Manufacturers Record before bids are to be opened, or when daily publications are necessary to meet legal requirements.

The same rate applies—20 cents per line per insertion.

TREASURY DEPARTMENT, Supervising Architect's Office, Washington, D. C., June 19, 1915. Sealed proposals will be opened in this office at 3 P. M. July 23, 1915, for the construction, complete (including mechanical equipment, lighting fixtures, and approaches), of a one-story, basement, and mezzanine, brick, terra-cotta, and stone-faced building of 3650 square feet ground area, partly fireproof construction, composition roof, for the United States postoffice at Quitman, Ga. Drawings and specifications may be obtained from the custodian of the site at Quitman, Ga., or at this office, in the discretion of the Supervising Architect, JAS. A. WETMORE, Acting Supervising Architect.

TREASURY DEPARTMENT, Supervising Architect's Office, Washington, D. C., June 28, 1915. Sealed proposals will be opened in this office at 3 P. M. July 30, 1915, for supplying to the Experimental Station, United States Bureau of Mines, Pittsburgh, Pa., one steam engine in accordance with the specification, copies of which may be had at this office in the discretion of the Supervising Architect, JAS. A. WETMORE, Acting Supervising Architect.

GOVERNORS ISLAND, N. Y. H. Sealed proposals, in triplicate, for furnishing Forage and Straw required in Eastern Department during nine months commencing Oct. 1, 1915, will be received here until 11 A. M. Aug. 2, 1915. Information furnished on application to Department Quartermaster.

PROPOSALS FOR LOCK GATES, U. S. Engineer Office, Wilmington, N. C. Sealed proposals will be received here until 12 M. July 19, 1915, and then opened, for furnishing steel lock gates. Further information on application.

\$6000 5% Bonds

The Mayor and Board of Aldermen of the Town of Wayneville, North Carolina, will receive bids until 3 P. M. July 25, 1915, for 30-year watered bonds. Interest payable semi-annually. Each bid must be accompanied by a certified check for \$200. Board reserves the right to reject any and all bids.

Morehead City, N. C., invites bids for the purchase of \$16,000 5% per cent. semi-annual refunding 30-year bonds. Bids will be opened Tuesday, July 6, 1915, at 9 o'clock P. M.

The town reserves the right to reject any and all bids.

Financial statement of town furnished on application.

\$16,000 5 1/2% Bonds

Morehead City, N. C., invites bids for the purchase of \$16,000 5 1/2% per cent. semi-annual refunding 30-year bonds. Bids will be opened Tuesday, July 6, 1915, at 9 o'clock P. M.

The town reserves the right to reject any and all bids.

Financial statement of town furnished on application.

\$20,000 School Bonds

Maxton, N. C., invites bids for the purchase of \$20,000 Coupon School Bonds, bearing interest not to exceed 6 per cent. per annum.

All bids to be accompanied by certified check for \$500. Right reserved to reject any and all bids.

MAXTON SPECIAL SCHOOL DISTRICT.

H. C. MacNair, Sec. and Treas.

\$30,000 5% Bonds

Keyser, W. Va., invites bids for the purchase of \$30,000 5% per cent. school bonds, dated July 1, 1915, payable from 1925 to 1930. Denomination of bonds, \$500 and \$1000. Payable at People's Bank, Keyser, W. Va. Limit of bonded indebtedness is \$122,727.24. Present bonded indebtedness, including present issue, \$50,000. Assessed valuation of property, \$4,869,129.70.

Population of district, 6000. District includes city of Keyser.

\$25,000 5% Bonds

The Board of Public Works of the Township of Cheraw, Chesterfield County, State of South Carolina, will receive sealed bids for the purchase of \$25,000 twenty-five-year 5 per cent. Road Improvement Coupon Bonds up to and including the 15th day of July, 1915. Bids must be accompanied by a certified check for \$500 as evidence of good faith. All expenses of printing bonds must be borne by bidders. The right to reject any and all bids is reserved. Address all bids or applications for information to Edward McIver, Cheraw, S. C.

G. A. SHERRILL, Chairman of Board of Public Works, Cheraw, S. C.

Street Paving

San Antonio, Tex., invites bids for the paving of eleven streets in the City of San Antonio, Texas, approximating 120,000 square yards, as per plans and specifications on file in the office of the City Engineer.

FRED FRIES, City Clerk.

PROPOSALS

SEWERS

WATER-WORKS

ELECTRIC LIGHT PLANTS

BRIDGES

Street Paving

Sarasota, Fla.

The City Council of the City of Sarasota will receive bids up to 9 A. M. July 24, 1915, on approximately 14,000 square yards of paving for Palm Ave. and Strawberry Ave. Bids will be received on the following materials: Brick, Asphaltic Concrete, Modified Asphalt, and Fibered Asphalt. Bidders to specify, when writing, which class of pavement they wish to bid on. Specifications on file with the Commissioner of Public Works.

FITCH P. WRIGHT, C. E.,
Commissioner.

Highway Improvement

The Board of Road Commissioners of Jackson township, Northampton county, N. C., will receive sealed proposals until 10 o'clock A. M. July 10, 1915, as per specifications on the construction of eight or ten miles of clay-gravel and sand-clay roads in said township, under the recent \$16,000 bond issue for that purpose. Plans, specifications, forms of contract and proposal, etc., may be had upon application from

G. A. MOORE, Secretary,
Jackson, N. C.

June 19, 1915.

Street Improvement

Cumberland, Md.

Sealed proposals addressed to the Mayor and City Council of Cumberland, Maryland, endorsed "Proposal for regrading, recubing, repaving, and otherwise improving Baltimore street," will be received at the office of the City Clerk, City Hall, on or before 9.30 A. M. Wednesday, July 7, 1915.

Approximately about six (6) thousand square yards of Cressoted Wood Block pavement required.

Plans and specifications can be procured at office of City Engineer, for which a deposit of ten dollars will be required, which will be refunded on return of plans in good order.

Each bid must be accompanied with a certified check for one hundred dollars, payable to the order of the Mayor and City Council of Cumberland, Md.

JAMES P. GAFFNEY,
City Engineer.

Road Grading, Culverts, Etc.

Sealed bids will be received until 12 noon July 20, 1915, for grading, masonry and culverts on about six miles of road; bids for the removal of earth and stone by cubic yards. Plans and specifications on file Oliver & Maupin, Engineers, Huntington, W. Va. Work to be let in mile sections. Payment on estimates. Certified check for \$500 will be required from each bidder. Court reserves right to reject all bids.

CABELL COUNTY COURT.

WEST VIRGINIA.
By R. S. Douthat, Clerk,
Huntington, W. Va.

Brick Roadway

Clearwater, Fla.

Sealed bids will be received by the Board of County Commissioners of Pinellas County, Florida, at their meeting at the Courthouse, June 18, 1915, to be opened at 2 P. M. in Clearwater, Florida, for the building of fifty miles, more or less, of brick roadway, nine feet wide, backed by three feet on each side of shell or rock. Plans, specifications and bid sheets can be seen on June 15 in the office of the Clerk of the Circuit Court at Clearwater, Florida. Bids will be considered in sections or as a whole, and all bids must be accompanied by a certified check of 5 per cent. of the total amount of bid. All bids will be subject to funds becoming available by vote of the electors on bonds or warrants ordered to be held July 3, 1915.

Board reserves the right to reject any or all bids.

C. W. WIECKING,
Clerk Board of County Commissioners,
Pinellas County, Florida.

Road Construction

Clearwater, Fla.

Bids will be received by the Board of County Commissioners of Pinellas County, Florida, at their office in the Courthouse in Clearwater, Florida, on July 8, 1915, at ten o'clock A. M., for the building of fifty miles, more or less, of nine-foot brick road with three feet on each side of shell, rock or marl, and the building of all necessary bridges, culverts, bulkheads, etc., all according to the plans, specifications, profiles, etc., on file in the office of the Clerk of the Circuit Court. All bids must be accompanied by either certified check amounting to 5 per cent. of amount of bid, or bidder's bond issued by approved surety company amounting to 10 per cent. of amount of bid.

All subject to carrying of bonds in bond election to be called.

Bids will be considered in units, sections, or as a whole, and the Board reserves the right to accept or reject bids in the same manner or to reject all bids as a whole.

Clearwater, Florida, June 18, 1915.

JOHN S. TAYLOR,
Chairman Board of County Commissioners,
Pinellas County, Florida.

Highway

DEPARTMENT OF PUBLIC FINANCES,
ACCOUNTING DIVISION.

New Orleans, La., June 23, 1915.

Pursuant to Ordinance Nos. 2440 and 2453, C. C. S., sealed proposals will be received at this office until the hour of 11 o'clock A. M. Tuesday, July 27, 1915, for the construction of a public highway from a point connecting with the existing Chef Menteur Road, in the vicinity of Chef Menteur, and thence to the Rigolets, in accordance with plans and specifications on file in the office of the City Engineer. Deposit \$1000 with the City Treasurer and his receipt enclosed with bid. Bond in an amount equal to 25 per cent. of the estimated cost of the work based on the price bid in the proposal. The City Engineer will furnish bidders with a blank form of proposal. No proposal will be considered unless submitted on such form. Bidders must have paid their City License in order that their bids may be accepted.

The city reserves the right to reject any and all bids.

A. G. RICKS,
Commissioner.

Street Improvement

Laurel, Miss.

Sealed proposals will be received by the Mayor and Board of Commissioners of the City of Laurel, Jones county, Miss., until 10 o'clock A. M. on the 20th day of July, 1915, for the following street improvements:

27,753 sq. yds. Asphalt Pavement.
10,078 sq. yds. Wood Block Pavement.
23,068 sq. yds. Gravel Pavement.
35,200 sq. ft. Concrete Sidewalks.

Specifications can be had on application to H. W. Bell, City Engineer, Laurel, Miss. All bids must be accompanied by a certified check, payable to order of City Treasurer, for two thousand dollars (\$2000), as security that the bidder will enter into said contract. Payment for said improvements will be made by paying certificates issued by the city, maturing in seven (7) annual installments and bearing interest at the rate of 6 per cent. per annum, payable semi-annually. Bids must be on printed blanks, which may be had from City Clerk on request.

The City Commissioners reserve the right to reject any and all bids.

Dated this the 23rd day of June, 1915.
D. F. GARDINER,
City Clerk of Laurel, Miss.

Highway

Frederick, Md.

Sealed proposals, addressed to the County Commissioners of Frederick County, and endorsed "Proposals for building a section of State-aid highway in Frederick County," through the town of Brunswick and upon or along the Brunswick-Petersville Road between the B. & O. Depot in Brunswick and the State Road at or near Petersville, for a distance of about 1.04 miles in the town of Brunswick, and 1.83 miles from the Brunswick Corporation line to the State Road at or near Petersville. Contractors will bid for each section of aforesaid road separately, that is, for that part in the town of Brunswick in one bid, and that part from the corporation line of Brunswick to the State Road at or near Petersville in another and separate bid; and said bids will be received by the County Commissioners of Frederick County at their office, Frederick, Md., until 12 o'clock noon of the 3d day of July, 1915, and at that time and place will be publicly opened and read.

All bids must be made upon blank forms to be obtained of the State Roads Commission at its office, 601 Garrett Building, Baltimore, Md. Bids must give the prices proposed both in writing and in figures, and must be signed by the bidder, with his address.

Each must be accompanied by a certified check for two hundred dollars (\$200), payable to the County Commissioners of Frederick County, said check to be returned to the bidder unless he fails to execute the contract should it be awarded to him.

Plans can be seen and forms of specification and contract may be obtained on cash payment of one dollar (\$1) at the office of the State Roads Commission, Baltimore, Md.

The Commissioners of Frederick County reserve the right to reject any and all proposals.

By order of County Commissioners.
JOHN W. HOLTER, Pres.
H. L. GAVER, Clerk.

Water-Works

Ashland, Alabama.

Sealed bids will be received by the Town of Ashland, Alabama, until 2 P. M. July 7, 1915, and then publicly opened, for the construction of a complete water-works system, consisting of the following items:

Distribution system, consisting of approximately four miles of 8", 6" and 4" cast-iron and 2" galvanized pipes, including hydrants, valves and specials.
150,000-gallon earth reservoir, lined.
Pumphouse, including motor-driven pump.
Masonry dam and intake.

Plans can be seen at the office of H. L. Adair, Mayor, Ashland, Ala., or at the office of Edgar B. Kay, Engineer, Tuscaloosa, Ala., and specifications and bidding sheets obtained on application to the engineer.

The right is reserved to reject any and all bids.

EDGAR B. KAY, Engineer,
Tuscaloosa, Alabama.
H. L. ADAIR, Mayor,
Ashland, Ala.

Water-Works

Maryville, Tenn.

Sealed proposals will be received by the Mayor and Board of Aldermen of the City of Maryville, Tenn., up until 1.30 P. M. July 7, 1915, and then publicly opened, for the construction of a complete system of water-works, including filtration plant, consisting of the following:

Distributing system, consisting of approximately 10 miles 4", 6", 8", 10" cast-iron water pipes, including hydrants, valves and boxes.

125,000-gallon steel tank and tower.
Filtration plant, 1,000,000-gallon daily capacity.

Brick pumping station, including pumps, boilers and auxiliaries.

Alternate bids will be received for electrical-driven units.

Concrete dam and intake.

3000 feet of fire hose, reels and nozzles.

(Note.—Alternate bids will be received on various items which are explained in specifications and for which blank proposals will be furnished.)

The above items are approximate only and are subject to change by the city.

Plans can be seen and specifications procured after June 26, 1915, in the office of Sam Everett, Mayor of Maryville, Tenn., and in the office of R. C. Huston & Co., Engineers, No. 1028 Falls Bldg., Memphis, Tenn.

No bids will be considered unless accompanied by certified check in the sum of \$5000 drawn on local bank.

The right is specially reserved to reject any and all bids. The award of this contract or any portion thereof will be subject to the sale of bonds.

SAM EVERETT,
Mayor.

W. A. McTEER,
Recorder.

R. C. HUSTON & CO.,
Engineers.

Building for Congregate Dining Hall, Kitchen, Storeroom and Cold Storage, Weston State Hospital, Weston, W. Va.

NOTICE TO CONTRACTORS.

Notice is hereby given that the undersigned State Board of Control will until noon of Tuesday, July 27, receive at its office in Charleston, W. Va., sealed bids for doing all the work and furnishing all the materials necessary to complete the building according to the plans and specifications prepared by H. Rus Warne, architect, Charleston, W. Va.

Size of building, 306 feet 6 inches long by 63 feet 2 inches wide; two stories; brick walls; pressed brick exterior and salt glazed brick interior; fireproof floors and ceilings; tile and composition floors; metal partitions and Keen cement plaster; slate roof on wood construction. Three fireproof covered passageways to main building.

Contractors can secure plans and specifications by addressing the office of the State Board of Control, Charleston, W. Va., accompanying their request with two checks of five dollars each. One of said checks will be returned to contractors when plans and specifications are returned to the undersigned.

All bids must be accompanied by certified check of five hundred dollars (\$500).

Public opening of bids will be held at the office of the State Board of Control at two o'clock P. M. Tuesday, July 27, 1915.

Immediately after contract is awarded, successful bidder will be required to execute proper contract with guaranty bond in penalty equal to one-half the amount of the contract price. If successful bidder fails to execute contract and bond, his check will be retained to cover expense of readvertising.

The above building must be entirely completed on or before April 1, 1916.

All bids must be made on forms furnished with the specifications. The State Board of Control reserves the right to reject any and all bids.

J. S. LAKIN,
President State Board of Control,
Charleston, W. Va.

Jail

Bardwell, Ky.

The Building Commissioners of Carlisle County, Kentucky, will on Tuesday, July 6, 1915, at the Courthouse in the City of Bardwell, in said county, receive bids on contract for erection of new jail in said county.

CARLISLE COUNTY
BUILDING COMMISSIONERS.
Per J. B. S. Hutson, President.

Attest:
R. O. WILLINGHAM, JR., Secretary.

Reinforced Concrete Buildings

New Orleans, La.

Sealed proposals will be received by the Board of Commissioners of the Port of New Orleans at their office, Suite 200 New Orleans Court Building, until July 21, 1915, at 2 o'clock P. M., and then publicly opened, for the construction of reinforced concrete buildings for the Cotton Warehouse and Terminal, including the two-story wharf-house, about 130 feet by 200 feet; warehouse "E," about 150 feet by 580 feet, with their attached runways and appurtenances, located on the Mississippi River near Valence street, in New Orleans.

A deposit of \$25,000 in cash or certified check is required with proposal. Bond of \$300,000 required with contract.

Payments monthly to the extent of 90 per cent. of the Engineers' estimate of work accomplished, including allowance for a reasonable stock of material.

On and after June 10, 1915, plans and specifications will be on file at the office of Ford, Bacon & Davis, No. 921 Canal street, New Orleans, La., by whom full sets will be furnished to prospective bidders on deposit of \$100, which will be refunded to depositors who submit proposals and return sets in good condition. To depositors who do not submit proposals \$80 will be refunded on return of the set in good condition.

The right is reserved to reject any and all bids and to waive informalities.

(Signed) ERNEST M. LOEB,
President.

Twenty Million Gallon Centrifugal Pump and Electric Power Equipment for Eastern Pumping Station, Baltimore, Md.

Sealed proposals in duplicate, endorsed "Bids for Furnishing and Erecting Twenty-Million-Gallon Centrifugal Pump and Electric Power Equipment for the Eastern Pumping Station, Water Department," addressed to the Board of Awards of Baltimore City, will be received at the office of the City Register, City Hall, Baltimore, Md., until 11 A. M. Wednesday, July 14, 1915.

Plans and specifications can be obtained at the office of the Water Engineer, City Hall, Baltimore, Md., on and after July 1, 1915. A charge of five dollars (\$5) will be made for each set of plans and specifications. This amount will be refunded upon the return of these plans and specifications in good condition before July 21, 1915. Specifications used in making a bid will be considered as returned.

A certified check of the bidder on a Clearing-house bank, made payable to the Mayor and City Council of Baltimore, for the sum of one thousand dollars (\$1000), will be required with each bid.

The extent of the work is approximately as follows:

For furnishing and erecting 3 250 K. V. A. Transformers, Circuit Breakers and High Tension Switchboard; 1 2-panel Low Tension Switchboard; all wiring and starter for connecting up 800 H. P. Motor; for furnishing one (1) 800 H. P. Motor and one (1) 25 H. P. Motor and Starter, and for furnishing one (1) 20,000,000-gallon daily capacity Centrifugal Pump.

The successful bidder will be required to give bond to comply with the City Charter respecting contracts.

While bids are asked for on the various items, the contract will be let as a whole.

The Board of Awards reserves the right to reject any or all bids.

ROBT. L. CLEMMITT,
Acting Water Engineer.

JOHN HUBERT,
Acting President Board of Awards.

Approved: FRANK DRISCOLL,
Asst. City Solicitor.

Approved: EZRA B. WHITMAN,
Consulting Engineer.

Asphalt and Kettles

Brooksville, Fla.

Sealed proposals, addressed to the County Commissioners of Hernando County, Brooksville, Florida, will be received until twelve o'clock noon July 17, 1915, for furnishing, delivered at Brooksville, Florida, the following: Approximately 2000 tons of asphalt, 3 asphalt kettles. Bids will be received on the above separately, and each bid shall be accompanied by a certified check for not less than two per cent. of amount of bid. The right is reserved to reject any or all bids. Specifications may be secured by addressing the Engineers at Brooksville, Florida.

M. H. SNOW, Clerk,
H. S. JAUDON ENGINEERING CO.,
Engineers,
Savannah, Ga.; Atlanta, Ga.

"Small Quarries"

CRUSHED STONE

JETTY STONE

GRANITE

RIPRAP

SAND

GENERAL CONSTRUCTION

STREET PAVING

REINFORCED CONCRETE

WATER WORKS

SEWERS

PRESTON-SMALL CONSTRUCTION COMPANY,

Macon, Georgia

INDUSTRIAL NEWS OF INTEREST

Items of news about industrial, railroad or financial interests, building operations, construction work, municipal improvements, or the sale of machinery or the letting of contracts in the South or Southwest, are invited from our readers whether they are advertisers or subscribers or not. We invite information of this character from readers in the North and West about their Southern business operations, as well as from Southern readers. News of value will be published just as readily when from non-advertisers as from advertisers.

Change of Atlanta Address.

Hughes Specialty Well Drilling Co., 96 Ashley Ave., Charleston, S. C., announces the removal of its Atlanta offices from 69 Bradford place to Room 1417 Empire Bldg. This company makes a specialty of drilling oil, gas and water wells, and is sales agent for "Glendora" triple plunger artesian well pumps, manufactured by the Deane Steam Pump Co., Holyoke, Mass.

Secures Controlling Interest.

Robley S. Stearnes, formerly secretary and treasurer of the Standard Electric Construction Co., 623-25 Poydras St., New Orleans, has bought the controlling interest of that company and is at present sole owner. Mr. Stearnes proposes to enlarge and develop the Standard Electric Construction Co., and states that it will be equipped to handle electrical jobs of any kind or size.

For Wire-Cut-Lug Brick.

The Dunn Wire-Cut-Lug Brick Co., Conneaut, O., reports that the city of St. Louis, one of the largest consumers of vitrified paving brick, in rewriting its specifications for paving brick has included the following phrase: "They shall be unpressed, side wire cut in such a manner that lugs will be formed during the process of cutting, and shall have the ends beveled."

E. A. Thompson Company.

E. A. Thompson, who recently resigned as Smoke Inspector for the city of Baltimore, has organized the firm of E. A. Thompson Company, with offices at No. 5 Hansa Haus, Baltimore, for the purpose of practicing consulting and efficiency engineering. Mr. Thompson has had a number of years practical experience in the design, erection and supervision of operation of power plants, and will specialize in inspection, investigation and reports on power plants.

Cinchfield Company Uses Ruggles-Coles Equipment.

In describing recently the machinery installed in the addition to the Cinchfield Portland Cement Co.'s plant at Kingsport, Tenn., mention was not made of the fact that the Ruggles-Coles Engineering Co., 50 Church St., New York, furnished a class A-10 dryer, the shell of which is 70 inches in diameter and 35 feet long. This is a duplicate of the A-10 dryer installed by the Ruggles-Coles company in the Cinchfield's main plant a year or two ago.

Working Day and Night.

The Goodyear Tire & Rubber Co. of Akron, O., in a recent letter to the Manufacturers Record, writes: "Our mechanical goods department is compelled to run day and night in an effort to take care of the demands made upon it. In fact, our whole mechanical goods line is showing a wonderful development. This department, which began in a very small way, has become one of the important departments of Goodyear's organization." As an instance of the work accomplished in the mechanical goods department, 240,000 feet of garden hose are turned out a week, and recently it is reported that 49,000 feet was the amount of one day's production.

New Supply and Equipment Company

Incorporation of the Harvey Company, 113 South St., Baltimore, with J. Edward Harvey, president; H. D. Harvey, treasurer, and H. Zollers, Jr., secretary, has been effected to handle railroad, contractors', builders', marine, industrial, motor and garage supplies and equipment. Arrangements will be made for representing principal manufacturers throughout the country. Outside of the office and warehouse at 113 South St., a storage yard at Curtis Bay, on the Baltimore & Ohio tracks, will be maintained. J. Edward Harvey, the president of the company, was formerly vice-president of the South Baltimore Car & Foundry Co., and also the proprietor of the Eastern Railway Co., and is well known to the railway and contractor trade throughout the country. In order that its mailing list and files may

be kept up to date, the company desires a complete line of the latest catalogues and price lists furnished by supply and equipment concerns.

Sheet and Tinplate Exhibit.

Sample sheets and plates from its line of sheet and tin mill products of every description form the basis of the Panama-Pacific display of the American Sheet & Tinplate Co., Frick Bldg., Pittsburgh, Pa. This exhibit is combined with the United States Steel Corporation and its subsidiary companies, which are showing their products in the Palace of Mines and Metallurgy. Many specimens of sheet and metal work, pressed, stamped and formed, make the display unusually attractive to persons interested in sheet and tin mill products. The entire range of operations of the steel industry are further illustrated by a complete series of motion-picture films.

Will Erect Modern Factory.

Two acres of land on the Philadelphia and New York line of the Pennsylvania Railroad at Tacony Station, Pa., have been purchased by the L. H. Gilmer Company, 52 N. 7th St., Philadelphia, for the purpose of establishing a large manufacturing plant. In order to take care of the increased business in automobile parts and general belting line, including tapes, webbings, automobile rebound straps and frame linings, woven endless belts, sand, polishing, power and conveying belts, a modern factory building will be erected on this plot immediately. As soon as buildings are completed the company will remove its offices and factory to the new site.

"Ebonized" Armo Culverts.

Rust-resisting qualities of "Armo American Ingot Iron" are claimed to be further strengthened by the "Ebonized" coating process introduced by the Dixie Culvert & Metal Co., Atlanta, Ga. After several months' experiment by the company's research department in an endeavor to discover a coating for American Ingot iron which would resist the effects of the elements when exposed to soil conditions, this treatment was adopted. The coating is said to act as a preservative, will withstand expansion and contraction, and during its lifetime prevent rust or corrosion. Full particulars regarding this new coated pipe will be furnished upon request to the Dixie Culvert & Metal Co.

"Sphinx" Black Print Paper.

"Sphinx" direct process black line paper, developed by F. Weber & Co., Philadelphia, is said to be the only printing paper of its kind made in America. If handled according to directions, the company claims this paper will give positive black lines on a pure white background under quick exposure, whether to the sun or under an arc light. The paper stock is of the best and it will withstand a great deal of handling, making it admirably suited for filing or recording purposes. For the time being, the company proposes to make "Sphinx" direct process black line paper in three weights only—thin, medium and extra heavy. The thin is said to be light and strong enough to be used as a tracing (on which corrections could be made with India ink) and from which blueprints can be made.

Establishes New Bases of Supplies.

Complete stocks of belting, hose, packing, valves, gaskets, tubing and other Goodrich mechanical goods are now carried at Norfolk, Va., and Birmingham, Ala., by the B. F. Goodrich Company, Akron, O., in order to give warehouse deliveries, without extra charge, to users of rubber goods in those districts. These stocks are in addition to those carried by Goodrich agents and jobbers distributed over the United States. For the benefit of prospective purchasers of motor trucks, the B. F. Goodrich Company is now distributing the third annual edition of its handbook on "Motor Trucks of America." The company states that its aim in compiling the volumes has been to put together, in convenient form

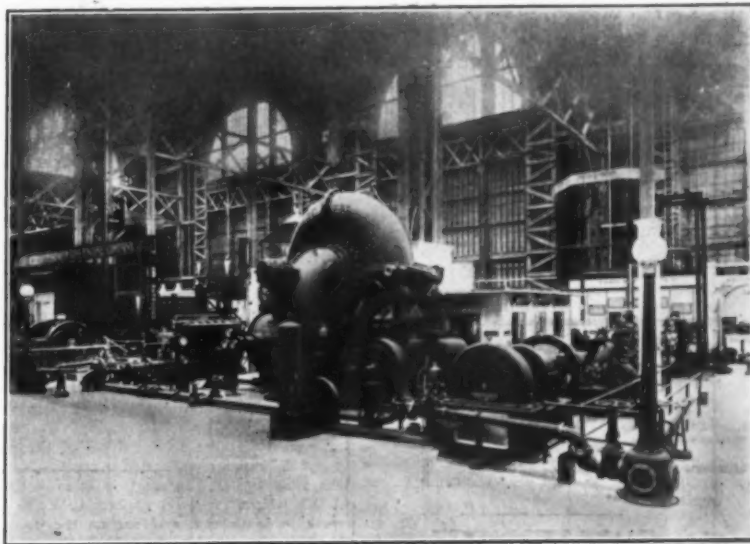
for comparison, the principal specifications and data for the more important makes and types of motor trucks manufactured in America, and incidentally to show that Goodrich "Wireless" truck tires are used, either as regular or optional equipment, on practically all American-made trucks.

Panama-Pacific Exhibit of Hydraulic Apparatus.

An entire block in the Palace of Machinery is given over to a display of hydraulic power apparatus and auxiliary equipment. This space is occupied by the Pelton Water-Wheel Co. of San Francisco and New York, and its co-exhibitors, New London Ship & Engine Co., Groton, Conn.; the Builders' Iron Foundry, Providence, R. I.; the Falk Company, Milwaukee, Wis.; General Electric Co., Schenectady, N. Y., and the West-

Steam and Gas Engine Sales.

Considerable activity is reported in the engine market by the C. & G. Cooper Co., Mt. Vernon, O. Recent sales of steam and gas engines made by the company are as follows: American Gypsum Co., Port Clinton, O., one 225 horse-power Uniflow engine, direct connected to a 150 K. W. generator, making the second Uniflow engine installed by this company; Wichita Pipe Line Co., Bartlesville, Okla., two Uniflow engines, 500 horse-power each, for driving gas compressor cylinders; Union Bleaching & Finishing Co., Greenville, S. C., new 18x24 Corliss cylinder and engine parts; Metropolitan Paving Brick Co., Canton, O., one 150 horse-power heavy-duty belt drive Corliss engine; Ohio Seamless Tube Co., Shelby, O., two 27x42 heavy-duty Corliss engines for driving piercing and rolling mills, and the Clarendon



Inghouse Electric & Manufacturing Co. of Pittsburgh. This exhibit comprises a heavy oil engine of the Diesel type, Pelton-Doble tangential water-wheels, Pelton-Francis turbines, governors for water-wheel control, horizontal and vertical turbine pumps, hydraulic mining giants, speed-increasing gears, water measuring and recording meters, electric generators and motors, and electric measuring and recording instruments. Representative types of each of these are shown in operation, and every facility is provided for investigating the action of these units.

Vilter Refrigerating Machinery Sales

Some of the recent contracts for ice-making and refrigerating equipment received by the Vilter Manufacturing Co., Milwaukee, Wis., include the following: Oklahoma City, Okla., plant of Morris & Co., Chicago, improved with a 250-ton refrigerating plant; Federal Soldiers' Home, St. James, Mo., 2 1/2-ton refrigerating plant; Quebedaux Fruit Co., Austin, Tex., a 2-ton refrigerating plant; Oscar Meyer & Bro., Chicago, 150-ton refrigerating plant; Emil Weiss, Greenville, Pa., 10-ton refrigerating plant; the Mosebach Dairy, Philadelphia, 25-ton refrigerating plant; Universal Film Co., Leonia Heights, N. J., a 33-ton refrigerating plant; Hepwood Meat Co., Bountiful, Utah, 15-ton refrigerating plant; Harbor Fish Co., Los Angeles, Cal., 15-ton refrigerating plant; United States Naval Station, Pearl Harbor, Hawaii, a 20-ton refrigerating and ice-making plant, and many others.

Construction Features of Panama Canal Shown at San Francisco.

Part of the exhibit which the Isthmian Canal Commission has made at the Panama-Pacific Exposition illustrates the methods of construction used on the canal. On display is a model of a section of Gatun Lock. It is 25 feet long and is made throughout to an exact scale. Represented on the model are four sets of electric duplex traveling cableways made by the Lidgerwood Manufacturing Co., 96 Liberty St., New York. The cableways travel the entire length of the locks, about 3000 feet, and are supported by 85-foot towers having a span of 800 feet.

Light and Water-works Equipment Contracts.

Board of Bond Trustees of the Municipal Light and Water-Works, South Jacksonville, Fla., has contracted for one 240-horse-power Una-Flow engine through the Atlanta offices of the Ames Iron Works, Oswego, N. Y., and for one 175 K. V. A. alternator, exciter and switchboard with the Atlanta office of the Allis-Chalmers Manufacturing Co., Milwaukee, Wis. Pine Forest Inn, Summerville, S. C., owned by F. W. Wagner & Co., Charleston, S. C., which is rebuilding power plant recently destroyed by fire, has placed the following contracts: Two 150-horse-power tubular boilers, piping, settings, etc., to Valk & Murdock, Charleston; two Una-Flow engines to Ames Iron Works, and for two generators and switchboard to the Westinghouse Electric & Manufacturing Co., Charlotte, N. C. The main office and works of the Westinghouse Company are at Pittsburgh, Pa.

Metal Lath Handbook.

The Associated Metal Lath Manufacturers, 812 Wick Bldg., Youngstown, O., have published the "Metal Lath Handbook." This is a handbook on metal lath and its uses. The introduction to the book's contents is as follows: "The limitations of wood lath as a vehicle for carrying plaster opened the way for a product that will not absorb moisture and that is not combustible. The book is designed to place concisely before architects and contractors the best methods of using metal lath, also illustra-



MODEL OF GATUN LOCK, SHOWING LIDGERWOOD EQUIPMENT.

tions and descriptions of the various kinds, and observations by the best authorities on construction affected by its use. There will also be found a condensed record of various scientific experiments, particularly in the way of fire tests which have been made to determine fundamental data affecting the use of metal lath. It is outside the scope of this work to discuss the relative merits of various building materials; what follows will, it is hoped, convince the reader of the impartial character of the fundamental data presented as evidence of the value of metal lath construction."

Holds Successful Test.

Demonstration of the "Uniform Method" of distributing asphalt was held recently in Lauderdale county, Miss., by the Uniform Asphalt Distributor Co., Meridan, Miss., to illustrate the operation of its newly developed road oil distributor. With this machine practically a perfect distribution is claimed to be obtained even with the heavy, viscous material used, which was so atomized that although a light treatment (one-quarter gallon per square yard) was applied, the road surface was entirely covered. The yardage covered by the various tanks of oil was said to be so nearly the same as to forcibly demonstrate the efficiency of the automatic control of the distribution. In commenting on the operation of the machine the company writes: "The machine has proved itself very economical, the contract having been completed at less than half the labor costs ordinarily incurred in this class of work, notwithstanding the machine was just as it came from the factory and the first contract it had performed. All who have seen the working of the machine are highly pleased with it, and the Good Roads Commission of this county, for whom the contract was performed, have expressed themselves as much gratified with the results we have given them." It is the intention of the company to put the machines out on a royalty basis with certain specified territory.

TRADE LITERATURE

General Electric Bulletin.

Standard unit direct-current small plant switchboard panels for 125 and 250-volt purposes of general power and lighting service are illustrated and described in detail in Bulletin No. 47060, recently issued by the General Electric Co., Schenectady, N. Y. Bulletin No. 4712, which supersedes No. A-4135, illustrates and describes G-E lightning arresters for electric railway service, both in the station, on the line and on the car.

The White Truck.

The June number of "The Albatross," issued monthly by the White Company, Cleveland, O., contains among many interesting articles a discussion on motor truck values, entitled "Truck Sense," and chapter VIII on motor construction of the serial story, "Little Visits to the White Factory." Several articles deal with the part the White truck is playing in good road construction work throughout the country, and many illustrations are shown of White trucks in actual service in many lines of industry.

Fruit, Melon and Vegetable Growers.

Circular D No. 1896-G, issued by the Central of Georgia Railway, Savannah, contains a list of fruit, vegetable and watermelon growers located on that line which passes through the heart of the great fruit belt in the States of Georgia and Alabama. Names, postoffice address and shipping point of the planters or shippers are given, together with the number of bearing peach, plum and pear trees, number of acres planted in watermelons and cantaloupes, and also number of acres of white potatoes under cultivation.

Portable Steel Buildings.

One-story galvanized steel buildings for garages and structures for storage purposes of all kinds, as well as for steel buildings erected on structural steel framing, which are used as motor truckhouses, factories, etc., are illustrated and described in a recently issued catalogue on "Prudential" steel buildings developed by the C. D. Pruden Company, Station C, Baltimore. Illustrations are also given in the catalogue of "Prudential" portable steel buildings in use as summer cottages, bunkhouses, contractors' buildings, barns, dairy-houses and other out-buildings for farm purposes.

National Tube Products Catalogue.

The leather-bound 450-page comprehensive catalogue "J" issued by the National Tube Co., Pittsburgh, describes pipe fittings, valves and specialties manufactured at its Kewanee works and in general other prod-

ucts manufactured by this company. Some idea of the completeness of the book may be derived from the fact that the index embraces approximately 1800 entries. Among the products listed are "National" pipe for steam, gas, water and air; cast iron, malleable iron and brass fittings; "Kewanee" unions and "Kewanee" specialties; brass and iron body valves and cocks, radiators and coils, drive well points and well supplies.

Practical Application of Pumping Machinery.

In a booklet recently issued by Fairbanks, Morse & Co. of Chicago, irrigation projects in many parts of the United States are attractively illustrated and briefly described. The plants shown therein are supplying water to land growing crops of beets, wheat, alfalfa, rice, corn and potatoes, and the land irrigated is located not only in the semi-arid tracts of the West, but in the Southern and Eastern States. One of the larger tracts mentioned is located in the beet-raising district of Southern Kansas. To the land irrigated a 60 horse-power Fairbanks-Morse oil engine, belted to a centrifugal pump, deliver about 4,000,000 gallons of water per day. The use of this water is claimed to have resulted in a yield of 19 tons of sugar beets to the acre. A very good idea, both of the machinery used and the character of the soil irrigated, may be gained from the text and illustrations in this publication, which is entitled "Practical Irrigation by Pumping." It will be supplied by the publishers free of charge to those interested.

Oil Engines in Louisiana Irrigation Work.

In the June issue of "Ideal Power," published monthly by the Chicago Pneumatic Tool Co., Fisher Bldg., Chicago, and 52 Vanderbilt Ave., New York, many illustrated articles describing the products of the company in actual operation are given. Among those of especial interest is one on Class A-DO "Giant" fuel oil engines in irrigation work in Louisiana, and one on the description of the new six-wheel "Little Giant" truck developed by the company. Another recent publication of the Chicago Pneumatic Tool Co. is Bulletin 34-X, relating to its Class A-G "Giant" gas and gasoline engines. Six sizes of this type of engine, ranging in horse-power from 16 to 130, are illustrated and described in detail. The engines are similar in general design to the well-known "Giant" fuel-oil-driven engines manufactured by the same company, with the exception that they are designed for operation with manufactured or natural gas. Copies of these publications and further information relative to these engines may be obtained by applying to either the Chicago or New York offices of the company.

Jeffrey Coal Crushers and Wagon Loaders.

Bulletin No. 141, issued by the Jeffrey Manufacturing Co., Columbus, O., contains illustrations, drawings, specifications and prices of the single roll coal crusher manufactured by the company. This crusher is particularly adapted for service at the mine and powerhouse when it is necessary to reduce lump coal to smaller sizes. It is designed to reduce run-of-mine coal to one-inch size and under in one operation, producing an economical and efficient stoker coal in a finely-divided state. Standard types of Jeffrey wagon and truck loaders for handling coal, coke, crushed stone, sand, gravel, clinker, fertilizers, ashes and other loose materials are illustrated and described in bulletins Nos. 165 and 166, which contain specifications and prices of the various types produced by the company. Heavy types of loaders for handling bituminous coal, crushed stone, etc., are self-propelling. They have a capacity of 1 to 1½ tons of coal per minute and will handle 1 to 1½ cubic yards of stone, sand, gravel and other heavy materials. The lightweight hand-propelled loader, especially designed for handling anthracite coal, has a capacity of ½ to ¾ of a ton per minute, and is equipped with a feeder attachment which pulls the coal into the buckets and eliminates the necessity of having a man on the pile to push the coal down. The loaders are fitted with screens and dust hoppers, and, if desired, the latter is made in combination with a bagger. Free copies of these and other publications issued by the Jeffrey Manufacturing Co. will be mailed to interested persons upon request.

C. M. C. Turbine Water Wheel.

In presenting its illustrated and descriptive catalogue and price-lists of the C. M. C. turbine water-wheel the Christiana Machine Co. of Christiana, Pa., makes the following statement: "We think it unneces-

sary to embody in this catalogue the detailed description of the wheels illustrated that were contained in our previous editions. The turbine water-wheel in its various forms has become the accepted standard machine throughout the world for developing water power, and no argument is longer needed to convince anyone of this fact. A good illustration shows at a glance the general construction of an article and indicates its merits, and it is only necessary to add a few convincing words as to the quality of materials and work that are employed in its manufacture. The balanced-gate turbine wheel in its various forms has been made by the Christiana Machine Co. for more than twenty years, during which time we have sold many hundreds throughout this country and others, and we have yet to learn of even the oldest of them being worn out. We think this argues for quality. But during these years we have made a number of improvements in details and in bringing out this edition of our catalogue. We take the occasion to rename it the C. M. C. turbine wheel. When the wheel had been on the market a year or two we wrote a number of our customers asking them for a frank expression of their opinion of the wheel or wheels they had bought. Most of them answered. We published all the answers. A few of these testimonials will be found scattered through this catalog. To keep up a high standard of work will be our aim in the future as it has been in the past."

Wilson Venetian Blinds, Etc.

A publication replete with photographic views presenting features of the Wilson Venetian blinds and awnings, with typical

applications of these light regulating devices, is being distributed by the J. G. Wilson Corporation, offices at 8 W. 40th St., New York, and in the McCormick Bldg., Chicago, and factory at Norfolk. In its general introduction to the book the company says: "This book is intended as an invitation to investigate the Wilson treatment of windows and piazzas, etc., in respect to control of light and air. Typical examples are shown in the house of moderate cost and in the house of luxury; also the application of the Wilson blind as an inside blind and as an outside blind, and its possibilities as an awning, etc. Examples of installation in some of the leading hotels, clubs and schools are shown. Each type of blind is the product of over 35 years' continuous study of various conditions. The founder of the company, J. G. Wilson, always held as a first necessity excellency of quality and design, economic cost of production following. This spirit has been and is the spirit of this company. The production of an article perfect in design and workmanship at a reasonable cost and one that will give complete satisfaction to our patrons is our aim. We hope you will accept the offer of our services whenever you desire to study the treatment of your windows or piazzas, with a view to obtaining the best results of light and air control. We offer you the services of an expert, who will study the physical conditions and advise as to the best method of accomplishing the results that you desire to attain. Our New York office has many examples of our products in use. Price-lists are so often confusing that while a brief summary of approximate cost is shown, we solicit your exact specifications."



The Price of Progress

THE Panama Canal stands as one of the most marvelous achievements of the age. Into its construction went not only the highest engineering skill, but the best business brains of the nation, backed by hundreds of millions of dollars.

Suppose conditions not to be foreseen made it necessary to replace the present canal with a new and larger waterway of the sea-level type, to be built in the next ten years.

Also suppose that this new canal would be the means of a great saving in time and money to the canal-using public, because of the rapid progress in canal engineering.

This sounds improbable; yet it illustrates exactly what has happened in the development of the telephone, and what certainly will happen again.

Increasing demands upon the telephone system, calling for more extended and better service, forced removal of every part of the plant not equal to these demands. Switchboards, cables, wires and the telephone instrument itself were changed time and again, as fast as the advancing art of the telephone could improve them.

It was practical to do all this because it greatly increased the capacity of the plant, reduced service rates and added subscribers by the hundred thousand.

In ten years, the telephone plant of the Bell System has been rebuilt and renewed, piece by piece, at an expense exceeding the cost of the Canal.

Thus the Bell System is kept at the highest point of efficiency, always apace with the telephone requirements of the public. And the usefulness of the telephone has been extended to all the people.

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Universal Service



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Resists Rust

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The discovery of the cause for the corrosion and rust of metals and the successful manufacture of a non-corrosive pure iron opened a new era in metallurgy.

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This coating will withstand the expansion and contraction, and will give long and efficient service.

We have manufactured and sold thousands of feet of Armco American Ingot Iron Culverts throughout the entire South, and wish to advise our many friends that we will continue to stand right back of the guarantee which we have always offered on our product.

The Armco Trademark is stamped on every section of Armco American Ingot Iron Culvert Pipe, and is your protection against substitution, and is always 99.84% pure.

We do not hesitate to call this the best iron for culvert pipe made anywhere in the world.

Full particulars regarding this new coated pipe will be furnished upon request.

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FOR SALE BY TRUSTEES

This plant is situated on the Western Maryland Railroad, thirty miles N. W. of Baltimore, and was built and equipped during the past three years at a cost of \$65,000. The plant is equipped with smelting furnaces, reverberatory furnaces, rotary pressure blowers, one 150 H. P. boiler, one 35 H. P. boiler, one 100 H. P. engine and three smaller engines, one Peerless compressor, four Monarch tilting coke furnaces, machine shop complete, pattern shop complete, iron foundry complete, and all other machinery necessary to make a complete metal and foundry establishment. Also large quantities of copper, zinc, lead, babbitt, brass, iron, etc.

Bids are solicited, to include plant and metal, all of which must be sold.

Apply to

WALTER H. DAVIS,
GEORGE W. BABYLON,
JOSEPH E. HUNTER,
Trustees,
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One Filer & Stowell 8-foot band mill, carriage, shotgun feed, gang edger, trimmer, steam nigger, engine, filing-room, equipment, pumps, shafting, pulleys; also various planing-mill machinery, including band resaw, double planer and matcher, power feed rip saw, engine, etc. A bargain at \$3500 cash for entire lot. Handy to load. In Kentucky, on L. & N. R. R. Particulars on request.

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Oil Mill For Sale

A two-press cottonseed-oil mill, situated 16 miles from railroad. The mill is in good condition, ready to operate, and can be removed and loaded on cars at a moderate cost. Has not been operated for several years, owing to boll-weevil destroying the cotton crop. The mill must be sold, and a rare bargain awaits someone. Can be made to pay for itself at the price asked in one season's operation.

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FOR SALE AT A BARGAIN

An 8000-spindle Mill, 188 looms, with first-class power plant, one-story brick building, 80x200 ft., and with brick warehouse, stables and waste rooms. For sale at a special bargain. The mill is running now full time, capacity about 70,000 lbs. of finished product per month, on Sheetings, Drills and Seamless Bags, and is making money. We haven't sufficient capital to run the mill as it ought to be run is the reason for selling.

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Island No. 8, Fulton County, Ky.

Located in the Mississippi River, seven miles below Hickman, Ky., and forty miles below Cairo, Ill. About 3000 acres of good farming land, with considerable merchantable timber of several varieties; some six or seven thousand cords of willow, suitable for paper pulp.

Located at the head of this island is a large sand and gravel deposit. Sand and gravel of a very sharp quality, excellent for concrete work, railroad ballast and good-roads building. Contractors contemplating bidding on any of the good roads in Fulton county, Ky., or Obion county, Tenn., should investigate the gravel proposition.

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One 24 ft. 60-ton Segmental Fly Wheel. Can bore hub for any shaft diameter up to 24".

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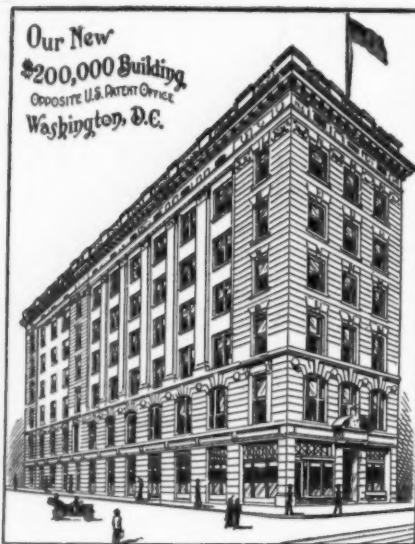
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Erick Nelson, cabinet.
R. C. Meadows, corn mill.
John Bothman, neck yoke.
J. H. Mayes, license-number display device.
Walter A. Kosinski, slag removing and indicating mechanism for open-hearth furnaces.
John Kinsel, automatic railroad gate.
O. C. Koch, spring wheel.
James Kraus, cable rack.
C. Domenico, key-operated lock.
Arthur F. Tiedge, protector for pneumatic tire.
J. Pickering, car door.
Martin T. Ostad, flag staff.
F. Wetzel, train control.
James C. Robertson, shoe-lace fastener.
E. T. Spittler, music leaf turner.
Alfred Spiegel, corset.
Messrs. Shoffstall & Shoffstall, train-stopping apparatus.
C. B. Husk, wagon attachment.
John L. Diehm, fuel holder.
George M. Collins, sweat band.
John W. McCoy, car wheel and axle.
Jackson Lynce, stovepipe holder.
W. B. McFarley, flying machine.
James Lamb, electric propulsion and control for motor boats.
C. C. Day, manual operating device for adding machine.
George Bower, revolving harrow.

Herbert C. Dilliard, side loader for concrete mixing machines.
John M. Lytle, switch operating device.
Charles P. Burt, selective speed mechanism and controlling devices therefor.
James Hovey, portieres.
Hiram A. Hovenden, lawn rake.
K. G. Hoover, time controlled mechanism.
Hugh D. Fortner, foldable tub stand and wringer support.
Adelbert D. Evans, inkwell attachment.
W. B. Eichholtz, car signal.
Carl Ekiss, spring wheel.
J. H. Everitt, fan actuating mechanism.
J. H. Ashburn, tobacco curing and yellowing pan.
H. S. Berger, gate valve.
T. C. Fisher, decorative support.
D. Forraiser, tongues for vehicles.
M. L. Fox, combined colanders, strainers and steamers.
Alfred Gray, traveling bag.
Clarence A. Best, broom holder.
James F. Black, shears.
W. H. Bowers, clamp.
J. G. Sharon, drinking cup.
E. J. Sheehan, pipes.
Messrs. Smith & Kaericher, water gate.
C. F. Lockwood, pile protecting device.
H. Lind, lubricating device.
John C. Larsen, labeling machine.
A. C. Will, handle lock.
Fred W. Piper, safety cack.
Oliver T. Romos, display rack or cabinet.
John V. Van Kolken, sliding door.

J. M. Siders, grubber.
John Hunsinger, brake device for sewing machine.
J. G. Thomas, clip for harrow teeth.
J. L. Hawkins, fruit picker.
J. E. North, nut lock.
J. A. Mogie, shoemaker's jack.
George E. Woods, automobile headlamp control.
J. Y. Savage, stepladder.
Edwin G. Schiller, trap nest.
Ulysses G. White, propelling and balancing mechanism for aircraft.
Miss Grace Wedoo, folding box.
Mrs. Annie Hillman, frame.
Myron Newton, beet and grain drill.
G. Whittall, locks.
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George D. Sicklesteel, boat motor.
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Theodore E. Bittner, card support.
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A. Schreck, gopher trap.
J. P. Hernandez, file box.
N. Mallone, tire for vehicle.
Mountain City Mill Co., package.
Allen Duval, car replacer.
C. M. A. Rosendahl, motorcycle spring.
H. Weinert, auto wheel.
Roy M. Vinyard, feed mechanism.
George F. Turner, folding box or crate.
W. J. Kennedy, self-soaping washboard.
S. B. Scheppmann, watering tank heater.
Edwin B. Hughson, gasoline tank.
William H. Hunter, plasterers' tool.
James H. Owen, fire alarm.
Charles A. Chalker, bedsprings.
Henry Luft, faucet.
James G. Ludwig, peel.
Bruce H. Nelson, grain-saving device.
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In New England territory would like to represent reliable concern in iron or machinery line, straight commission basis. Prompt attention to all inquiries. Have storage facilities—salesmen on road—equipped with business autos. Write for information. Address
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 with all conditions in their favor, should write me about new **EARLE BUILDING**, Birmingham, Ala.—five stories and basement, strictly modern, full fireproof construction, in heart of city, and one hundred feet from best improved corner in the South.
R. A. TERRELL
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300-BARREL FLOURING MILL

FOR SALE
 Harrisonburg, Va., on Southern Railway, heart of wheat-growing Valley of Virginia. Terms easy. Address
LAIRD L. CONRAD, Commissioner
 Harrisonburg, Va.

FOR SALE

The following described Property in the City of Natchez, Miss.

One lot on Franklin Street between Wall Street and Canal Street, with frontage of approximately 328 feet on Franklin and 128 feet on each Wall and Canal, with all buildings and appurtenances thereon, but not including machinery therein, and commonly known as the Adams Mill.

One lot on Jefferson Street between Canal Street and Broadway, with frontage of approximately 236 feet on Jefferson and 188 feet on each Canal and Broadway, with all buildings and appurtenances thereon, but not including machinery therein, commonly known as the Carpenter-Dicks Mill.

Being the property heretofore conveyed by the Mississippi Cotton Oil Company to the Union Seed & Fertilizer Company, but not including the machinery so conveyed. Terms cash, or one-fourth cash, balance on equal payments one, two and three years, with interest at 6 per cent., provided a satisfactory price shall be agreed upon.

If not sold prior to July 8, 1915, we will on that day at or about the hour of 12 M., at the front door of the Courthouse of Adams County, Mississippi, offer at public outcry to the highest bidder the above-described properties, separately and collectively.

If when so offered a bid satisfactory to the owners shall be made, said property will be sold on the same terms, as to payments, as are above mentioned. We reserve the right to reject any and all bids.

For further information apply to

UNION SEED & FERTILIZER COMPANY
 Jackson, Mississippi

GOOD OPENING FOR MAN WITH MONEY

N&W
RY.

Company engaged in the manufacture of brick and hollow ware desires to increase capacity of plant. Heretofore plant has produced the cheaper grades of brick only. An increased capital will make possible the manufacture of the better grades, for which there is a market in nearby territory. Company will give first mortgage on property valued at \$125,000, or, if preferred, will give bonds or stock for the money and make party furnishing money active officer in company. An excellent proposition for the right person. For details REFER TO FILE M-6223.

N&W
RY.

ADDITIONAL CAPITAL WANTED

A modern equipped machine and woodworking plant, located in progressive North Carolina city, with three railways, desires additional capital. This concern does general machine, boiler and engine work, and in addition manufactures an attractive line of step-ladders, lawn swings, etc. Company owns property well located in business section of city. More money required to extend business.

REFER TO FILE M-6211.

For details write
F. H. LA BAUME, Agr'l and Ind'l Agt., Norfolk & Western Railway Co., Roanoke, Virginia.

Bargains in Machinery and Supplies.

STEAM HAMMERS

Single Frame Steam Forging Hammers of all sizes in stock for immediate shipment. Get our prices before buying. They will interest you.

Erie Foundry Company **ERIE, PA.**

POWER and COAL MINING EQUIPMENT

IN EXCELLENT CONDITION

FOR SALE

Direct Current Generating Sets, 250 and 550 volts.
 100 K. W., 3-phase, 60-cycle, 440 volt Generating Unit.
 Feed Water Heaters—Cochrane, Stillwell-Bierce and McGowan.
 Horizontal and Vertical Steam Engines, 5 to 320 H. P.
 Air Compressors—Laidlaw-Dunn-Gordon and Norwalk, capacities 900 cu. ft. to 2100 cu. ft.
 Separators, Steam Traps and Piping.
 Steam Pumps, Piston and Plunger, best makes.
 Mining Equipment. Full list furnished on request.

NEW RIVER COMPANY

Equipment Sales Department **MACDONALD, W. VA.**

MACHINERY BARGAINS

- 1 No. 40 Double Shaving Exhauster, complete with all pipes.
- 1 24x4 Four-Sided Planer and Matcher.
- 1 42" Band Resaw.
- 1 30x7 Whitney Double Surfer.
- 2 16" Jointers.
- 1 30x7 Whitney Single Panel Planer.
- 1 8" Jointer.
- 1 Berlin 48" Triple Drum Sander.
- 50 24" 80-lb. I Beams, lengths to 30'.
- 95 20" 65-lb. I Beams, 19' to 20'.
- 65 15" 60-lb. I Beams, 18' to 20'.
- 165 15" 60-lb. I Beams, 16' to 22'.
- 200 10 1/2" 35-lb. I Beams, 14' to 22'.
- 150 tons 12" 35-lb. Sheet Piling.

Write for Free Complete List No. XB-211.

Harris Brothers Company, Owners
CHICAGO HOUSE WRECKING CO.
 35th and Iron Sts. **CHICAGO, ILL.**

One 50 H.P. Foss Gas Engine, One 30' Newton Cold Saw, One 22' Espen Lucas Cold Saw

The above equipment in first-class condition, for immediate sale.

THE WEST STEEL CASTING CO.
 805-813 E. 70th and Q. S. & MS. RY.
 Cleveland, Ohio

Complete Sawmill For Sale

Complete Sawmill with resaw, capacity 30,000 feet per day.
 Barnhart log loader.

35-ton Shay geared locomotive, standard gauge.

1 Iron bridge composed of three 400-foot spans.

Campbell Lumber Co., Marlinton, W. Va.

REFRIGERATING MACHINE

35-ton Pennsylvania Refrigerating Machine, Corliss engine driven, complete with all attachments. In fine condition.

Write for bargain price.

STERLING IRON & STEEL CO.
 Tenth and Hamilton Sts. **Philadelphia, Pa.**

For Sale at Pittsburgh, Pa.

- 1 250 H. P. Heine Water-Tube Boiler.
- 1 16x18 Buckeye Engine.
- 1 60 E. E. Thomson Electric Welding Generator.
- 1 15 C. C. Thomson Electric Welding Generator.
- 1 Laidlaw & Dunn 8" Deep Well Steam Pump Head.
- 1 Hoppes No. 7 Exhaust Steam Water Heater.
- 1 12x12x14 Ingersoll-Sargent Air Compressor.
- 1 4" Dean Duplex Steam Pump.

ALL IN GOOD CONDITION.

Address 1608 Benedum Trees Building
PITTSBURGH, PA.

AT A BARGAIN

10,000 feet 22" Riveted Steel Dredge Pipe (first-class condition, practically good as new) at 50c. per foot f. o. b. cars, for immediate shipment.

2 1,000,000-gallon D'Auria Pumps (can now be seen working).

1 Ingersoll-Sargent Straight Line Air Compressor, 22x22x14.

1 Ingersoll-Sargent Straight Line Air Compressor, 16x16x18.

2 Ingersoll-Sargent Straight Line Air Compressors, 12x16x14.

PLANTS BOUGHT AND DISMANTLED.

Boston Iron & Metal Company
 Baltimore, Md.

FOR SALE

80-ton Refrigerating Machine

PRACTICALLY NEW

1—80-ton Wolf-Linde Refrigerating Machine—compressor 15 1/2" bore by 30" stroke; direct connected to Filer & Stowell Rolling Mill Type Corliss Engine, 16" bore by 42" stroke. This outfit is complete in detail and in first-class operating condition, having been in service eighteen months only. Can be seen in operation. Will sell at a sacrifice to quick buyer.

Pfannmueller Engineering Co.

Suite 1733 First National Bank Building
CHICAGO

Motors, Dynamos, Switchboards, Etc.

- 400 H. P. G. E. Induction Motor, 720 R. P. M., 2200 volts, complete.....\$2000.00
 - 75 H. P. Westinghouse, slip ring..... 425.00
 - 75 H. P. G. E., slip ring, new, 850 R. P. M., complete..... 500.00
 - 50 H. P. Allis-Chalmers, 3-phase, new, 850 R. P. M., complete..... 300.00
 - 50 H. P. G. E., 2-phase, 850 R. P. M., complete..... 245.00
 - 35 H. P. G. E., 3-phase, 850 R. P. M., complete..... 215.00
 - 25 H. P. Westinghouse, 3-phase, 1140 R. P. M., complete..... 200.00
 - 25 K. W. C. & C. to Watertown engine, 115 volts..... 400.00
 - 30 K. W. Eddy to New York safety engine, 120 volts..... 500.00
- Large stock of smaller motors and dynamos, both A. C. and D. C. Let us have your requirements.
R. Scheibert & Co., 125 N. Third St., Philadelphia

Scotch Marine Boilers For Sale

One 250 H. P. Boiler, Scotch marine type, equipped with Burke smokeless furnace.
 One 100 H. P. Boiler, Scotch marine type, equipped with Burke smokeless furnace.
 In use only short while, practically new.

CLAY COUNTY COTTON OIL CO.
 WEST POINT, MISS

BOILER BARGAINS

2 175 H. P. Heine Water-Tube Boilers.
 2 250 H. P. Stirling Water-Tube Boilers.
 1 300 H. P. B. & W. Water-Tube Boiler, good for 150 lbs. pressure. Hartford insurance. Complete with all fittings. \$3.50 per H. P.

STERLING IRON & STEEL CO.
 Tenth and Hamilton Sts. **Philadelphia, Pa.**

Gas Engine, Grain Pressers, Dryer, Bagging Machine, Safe, Scale, Motors, Dump Wagons, etc.

FOR SALE

A large gas engine, 14-in. belt; 3 large grain pressers, with conveyors, complete; a large grain dryer, for brewer's grain or fruit; bagging machine; large safe; 5-ton wagon scale; 5 different-sized motors; 10 steel-body back-dump grain wagons, suitable for coal, brick or scavenger; 12 Bain dump wagons, 1 1/2 and 2 yards capacity.

415 W. Fayette Street

BALTIMORE, MD.

Refrigerating Machine

7-ton York, steam-driven, Refrigerating Machine.

Compressor and engine on same bed plate.

CHEAP

The Assets Purchasing Company
WHEELING, W. VA.

Turret Lathes—Screw Machines

28" Gisholt.
24" Gisholt.
21" Gisholt.
20"x10" Jones & Lamson, geared head, single pulley drive, 4 1/4" hole in spindle, scroll chuck, thread-chasing attachment.
20"x7" 6" Jones & Lamson Chucking Turret Lathe; turret has six 2 1/2" holes, double cut-off slide.
3"x36" Jones & Lamson Flat Turret Lathe.
2"x24" Jones & Lamson Flat Turret, single pulley drive.
Two Potter & Johnston Semi-Automatic Turret Lathes, 4" hole in spindle.
One Potter & Johnston Semi-Automatic Turret Lathe, 3" hole in spindle.
24" Bridgeport Gap Turret Lathe, back geared, friction head, hexagon turret, power feed.
Potter & Johnston Hand Screw Machine, 1 1/2" capacity.
Cleveland Automatic, 1 1/4" capacity.
Pratt & Whitney Hand Screw Machine, 2" capacity.
Garvin Hand Screw Machine, 1 1/2" capacity.
22"x6" Draper Turret Lathe.
Wood Tilting Turret Lathe, 3/4" capacity through wire feed.
14"x6" Bullard Turret Lathe.
Two 16"x6" Pratt & Whitney Turret Lathes.
16"x6" Reed Turret Lathe.
18"x6" Warner & Swasey Universal Turret Lathe.
Two 18"x6" Draper Turret Lathes.
18"x6" American Fox Monitor Brass Lathe.
12"x4" Warner & Swasey Turret Lathe.
20"x7" Fay & Scott Turret and Turning Lathe.
Four Pratt & Whitney No. 1 Hand Turret Lathes.
Pratt & Whitney No. 1 Hand Screw Machine.
Cleveland Automatic Screw Machine, 5-16" capacity.
Garvin Hand Screw Machine, 5-16" capacity.
If you are looking for Engine Lathes, Turret Lathes, Radial Drills, Milling Machines, Gear Cutters, Planers, Keyseaters, Punch and Shears and any other standard machine or ironworking tools, kindly advise us, as we carry a large stock.
All our machines are rebuilt or refitted before shipment and are guaranteed to be complete and in good operative condition.

New York Machinery Exchange

50 Church St. NEW YORK, N. Y.

Used Machine Tools**PRESSES**

1 No. 4 Geared "Bliss."
1 No. 4 Flywheel "Bliss."
1 No. 18 "Bliss" Inclinable.
2 No. 2 "Bliss."
1 No. 1 "Phila. Machine Co."
1 No. 3 "Henderson."
1 No. 97 "Niagara," double action geared, drawing.
Also a number of foot presses.

SPECIAL BARGAINS

1 No. 12 "Garvin" plain miller.
1 10"-12" "Dill" slotter—little used—good as new.
1 2 1/2" "Landis" bolt cutter (motor driven), brand new.
1 36" "Bullard" boring mill—recently overhauled.
1 16" "Queen City" shaper, back geared—complete with usual attachments.
1 No. 3 18"x6" "Warner & Swasey" turret lathe—wire feed—friction geared head—chasing bar—lot of hobs and collets.
A large stock of other ironworking and woodworking machinery, steam and electric power equipment.
We will buy for cash good used machinery. What have you to offer?

L. F. SEYFERT'S SONS, Inc.

437 N. Third St. Philadelphia

Unusual Bargain

3-66"x18" Horizontal Butt Strap Boilers, 125 lbs working pressure.
Breeching; also 100 ft. 54" stack.
Piping and Valves.

BRAND NEW BOILERS
SECOND-HAND PRICE

Howard W. Read Company

Third and Arch Streets
PHILADELPHIA, PA.

In replacing our manufacturing equipment we find the following first-class

Used Machine Tools

which we offer at attractive prices

ENGINE LATHES

No. 142-18"x10" Lodge & Shipley Motor-Driven Patent Head.
No. 136-20"x12" Lodge & Shipley Patent Head.
No. 49 D-24"x12" Sellers.

SPECIAL LATHES

No. 76-No. 3 Lodge & Shipley Rapid Reduction.
No. 5302-30"x16" Lodge & Shipley High Speed.
No. 1306-14"x8" Towley 4-step Cone Speed.

TURRET LATHES

No. 28-16"x8" Lodge & Shipley 3-step Cone.
No. 111-22"x7" Lodge & Shipley 3-step Cone, Friction Head.
No. 122-Two 24"x10" Lodge & Shipley 3-step Cone, Friction Head.
No. 166-18"x6" Lodge & Shipley Turret.
No. 101-22"x7" Lodge & Shipley Turret.

PLANERS AND SHAPERS

No. A-30"x30"x10" Detrick & Harvey Open Side.
No. B-36"x36"x12" Niles.
No. 248-30"x30"x10" Gray.
No. 219-24"x24"x12" Ohio.
No. 232-16" Queen City Back Geared.
No. D 223-26" Smith & Mills Shifting Belt.

GRINDERS

No. 629-No. 16 Landis Plain Grinder.
No. 650-No. 11 Landis Plain Grinder.
No. 608-No. 3 Landis Plain Grinder.
No. 634-No. 24 Landis Plain Grinder.
No. 636-Hivett Grinder equipped with Head Internal Head.
No. 703-No. 1 LeBlond Universal Cutter and Tool Grinder.

MISCELLANEOUS

No. 1352-Bullard Vertical Boring Machine with Turret on slide.
No. 347-Burke Hand Miller.
No. 432-Gardam Multiple (four-spindle) Drill.
No. 432-3-spindle Henry & Wright Sensitive Drill.
No. 522-Fay 28" Wood Planer.
No. 690-Marion Buffing Stand for two wheels.
No. 1907-Bowscher 12"x38" Balancing Ways.
No. 2006-Ingersoll-Sargeant Drill Co. 8"x8" Belt-Driven Double-Acting Air Compressor.
No. 1690-2"x8" Rockford Straightening Machine.
No. 1336-Sturtevant Blower. Diameter of outlet, 5 1/2".
No. 2531-Sturtevant Blower. Diameter of outlet, 5 1/2".
No. 1326-Two 2" Cleveland Automatic Turret Machines.
No. 1340-1" Cleveland Automatic Turret Machine.
No. 1329-2 1/2" Hartford Automatic Screw Machine.
No. 683-Mueller Grindstone Frame for 4"x27" stone.
No. C-Diamond Emery Wheel Stand (for two wheels).
No. D-West Haven Hack Saw (for 6" stock).
No. E-Pawling & Harnischfeger Horizontal Boring Machine with Bausch 6-spindle attachment.
No. 1363-12"x40" Mumford Molding Machine.
No. 1379-Universal Swivel Table for Radial Drill.
No. D 1356-Diamond Combination Grinding and Polishing Stand.
No. 1401-Gleason Mitre Gear Tester.
No. 661-Globe Tool Sharpener for 1/4"x8" wheels.
No. D 1355-Centering Machine, chuck capacity 2".
No. 1105-Towley Mfg. Co. Screw Press; 1'x16" table; height 2'9".

The Lodge & Shipley Machine Tool Co.
CINCINNATI, OHIO

Cross Compound Corliss Engines**FOR SALE**

2-20x38x48 500 H. P. 80 R. P. M. Hamilton.
1-14x26x42 350 H. P. 85 R. P. M. Hamilton.

Above have rope drive wheels. Are in first-class condition.

Price \$25 per net ton.

National Machinery & Wrecking Co.
1916 Scranton Road
Electrical Dept. CLEVELAND, OHIO

FOR SALE

Train of two 21" Roughing Mills.
650 H. P. Wetherill Rolling Mill Engine.
600 H. P. Buckeye Horizontal Twin Steam Engine.
Four Root Patent Foundry Blowers 5 1/2" (A).
Five Chicago Pneumatic Tool Company Air Hoists.

W. L. BIRTWELL
Crozer Building PHILADELPHIA

ELECTRIC PLANT FOR SALE

A. C. and D. C. Generators, Pumps, National and Babcock & Wilcox Water-Tube Boilers, National Feed-Water Heaters, Engines. 500 H. P. Double Hamilton Corliss, 2 pulleys 18"x26", 80 R. P. M.; Philadelphia Corliss, 20"x54", flywheel 24"x50", 80 R. P. M., and others. Full particulars upon request.
I. KAMRASS LONG BRANCH, N. J.

THERE IS A REASON

why our properly Rebuilt Machinery gives satisfaction

ASK US

ENGINES, CORLISS: 18x42 Hamilton; 16x42 Brown; 16x42 Hamilton; 14x42 Hamilton; 14x36 Nagle; 12x30 Hamilton; 10x24 Hamilton.
ENGINES, AUTOMATIC: 21x22 Ridgway; 19x18 Ball; 14x14 Erie; 10x16x12 Buffalo Compound; 13x12 Ball; 12x14 Green; 12 1/2x12 Armstrong & Sims; 10x18 Buckeye; 8x14 Noyes; 8x10 McEwen; 5x6 Harrisburg.
ENGINES, THROTTLING: 20x24 H. S. & G.; 16x18 Ames; 14x14 Lewis, vertical; 13x16 Erie; 12x14 Gibbs; 11x16 H. S. & G.; 10x16 Lane & Bodley; 10x12 new Randle; 8x12 Erie; 8x10 Brownell; 7x10 Union; 6x8 Industrial, vertical; 5x6 Industrial; 3x4 Kriebel.
BOILERS, STATIONARY: HIGH PRESSURE: 1 200 H. P. for 125 lbs.; 2 150 H. P. for 125 lbs.; 1 125 H. P. for 125 lbs.; 3 100 H. P. for 110 lbs.
BOILERS, STANDARD: From 150 to 20 H. P. for 100 lbs.
BOILERS, LOCOMOTIVE FIRE BOX: From 150 to 10 H. P., high and low pressure.
BOILERS, VERTICAL: 60 to 4 H. P., plain and submerged tubular.
GENERATORS AND MOTORS: Belted and direct connected.

MISCELLANEOUS: Heaters, open and closed; pumps, all sizes; sawmills; corn mills and feed grinders; exhaust fans and blowers; woodworking machinery; ironworking tools; leather, rubber and canvas stitched belts; pipe, valves and engine and boiler fittings.
Sole manufacturers of the "Leader" Injector and Ejector. Ask for circular.

THE RANDLE MACHINERY CO.
1734 Powers St., Cincinnati, O.

CASH REWARD FOR FIRST INFORMATION

As to the location and leading to the purchase of

Good Second-Hand Electric Motors

V. M. NUSSBAUM & CO., Ft. Wayne, Ind.

OIL ENGINE**FOR SALE**

One Fairbanks-Morse 40 H. P., type N, Oil Engine; practically new. Burns gasoline, coal oil or low grade distillate. Address

WILSON & COCHRAN, Lottie, La.

2 300 H.P. Westinghouse Gas Engines; vert.; all accessories; \$2500 each

H. R. WILSON—419 Pine St., St. Louis, Mo.

CORLISS ENGINES

10x30 Allis; 12x30 Corliss; 2-16x30 W. C. L., \$500 ea.; 22x42 Hamilton; 30x60 H. & B.; 2 14x36 St. L. & Mur., \$350 ea.; 13x30 Quincy, \$400; 18x42 Bates, \$650; 16x36 Murray, \$850; 28x48 Cooper, \$1500; 32 & 62x60 Allis Hor. Cross, C. H. D.; 26 & 54x60 Allis Hor. Tand. C. H. D.

WILSON MACHINERY CO.

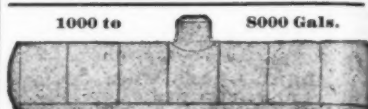
419 Pine St.—OTHER SIZES—St. Louis.

BOILERS**FOR SALE**

1-300 H. P. Vogt Water Tube Boiler, 150 pounds, with Green Stoker and 60"x100" steel stack, used only 18 months.

1-100 H. P. Vogt Hand-fired Water Tube Boiler, 150 pounds, used one year.

HENRY VOGT MACHINE CO.
LOUISVILLE, KY.



We have several 8000-size with heater coils—guaranteed tight. Get them while you can.

"ZELNICKER" in ST. LOUIS

OIL ENGINES

70 H. P. De La Vergne, twin cylinder, \$1500.
35 H. P. De La Vergne, \$700.
20 H. P. De La Vergne, \$350.
15 H. P. De La Vergne, \$275.

DUZETS & SON

Hudson Terminal Bldg. NEW YORK

Motors For Sale

One each fifteen, twenty, thirty, thirty-five H. P. 500-volt G. E. motors, good running order, with starting rheostats. For particulars,

E. O. PAINTER FERTILIZER CO.
Jacksonville Duval County, Florida

NEW STOCK LIST

We have just received from the printers our new Stock List, which covers our entire line of power equipment, steam and electric; contractor's outfits, motors and generators, pumps, heaters, air compressors, machine tools, woodworking machinery, etc.

If you are not on our mailing list send for a copy, it is well worth looking over. We are now dismantling several machine shops, which contain a good assortment of fine machines. A special list of these will be mailed on request.

MACHINE TOOLS

50"x16" Pittsburgh Machine Tool Co. Heavy Lathe.
50"x27" New Haven Lathe.
33"x55"x12" Extension Bed Gap Lathe.
30"x16" Pond Lathe.
30"x12" New York Safety Lathe.
25 smaller lathes in stock.
48"x18"x15" Sellers Planer.
48"x18"x6" Sellers Planer, blocked out to 30"x30"x12" Standard Planer.
30"x30"x9" Whitcomb Planer.
Large stock of smaller Planers.
36"x12" Hess Heavy Duty Slab Milling Machine.
No. 4 Williams-White Bulldozer.
No. 5 Stiles Power Press.
3500-lb. Bement-Miles Double-Frame Steam Hammer.
Brown & Sharpe No. 3 Gear Cutter.
Whitton Hand-Feed Gear Cutter.
30" Double-End Sellers Pumph and Shear, weight about 35,000 lbs.
350-lb. Bement-Miles Single-Frame Steam Hammer.
16" H. G. American Shaper.
16" Stockbridge Shaper with centers.
60" Bement Horizontal Boring Mill.
48" Bement Horizontal Boring Mill.

POWER EQUIPMENT**Boilers**

2 350 H. P. Sterling Water Tube, 150 lbs. steam working pressure.
3 250 H. P. Franklin Water Tube, 150 lbs. steam working pressure.
1 150 H. P. Babcock & Wilcox Water Tube, 150 lbs. steam working pressure.
6 150 H. P. 72"x18" Horizontal Tubular, 125 lbs. steam working pressure.

CORLISS ENGINES

24"x42" Allis, left hand.
18"x42" Watts-Campbell, right hand.
16"x36" Allis, left hand.

2 14"x36" Scottsdale, right and left hand.
14"x36" Lane & Bodley, left hand.
12"x36" Allis, left hand.

FIRE PUMPS

2 500-gal. 14"x7 1/2"x12" Underwriter's Fire Pumps.

AIR COMPRESSORS

1 18" x 20 1/4" — 13 1/4" x 24" Ingersoll-Sargeant Class A Straight Line, two-stage. Capacity 940 cu. ft.
1 20" x 20 1/4" x 30" Ingersoll-Sargeant, Class A, Straight Line. Capacity 900 cu. ft.
1 12" x 14 1/4" x 14" Ingersoll-Sargeant Class A Straight Line. Capacity 385 cu. ft.
1 12" x 12" x 16" Ingersoll-Sargeant Class C Straight Line. Capacity 275 cu. ft.
1 10" x 10" x 16" Ingersoll-Sargeant Duplex. Capacity 275 cu. ft.

ELECTRICAL EQUIPMENT**DIRECT CONNECTED UNITS.**

150 K. W. 250-volt D. C. Crocker-Wheeler, with Wright Horizontal Tandem Compound 14 1/2"x24"x16" Engine.
105 K. W. 220-volt 3-phase 60-cycle A. C. Westinghouse Alternator, with 15"x16" Buckeye Horizontal Automatic Engine.
50 K. W. 125-volt D. C. Westinghouse, with Westinghouse Vertical Compound Automatic Engine 10"x15"x10".
Two 7 K. W. 125-volt D. C. Westinghouse Generators, direct connected to 7 1/2"x7" Westinghouse Standard Vertical Engines.

MOTORS and GENERATORS

Motors, direct and alternating current, all sizes from 1 to 100 H. P., in stock for immediate delivery.

Send for our list.
Generators, large stock from 1 K. W. to 75 K. W., 110 and 220-volt, direct and alternating current.
SPECIAL: 2 500 K. W. 550-volt 3-phase 60-cycle General Electric Alternators, 360 R. P. M.

FRANK TOOMEY, Incorporated
127-131 North Third Street

PHILADELPHIA, PA

Special Bargains in Sanders

1 42" 3-drum Perfection Sander, thoroughly overhauled.....\$350.00
 1 48" 3-drum Thomas Sander.....\$400.00
 1 48" 4-drum H. B. Smith Sander.....\$500.00
 1 48" 3-drum Royal Invincible Sander, used only 3 weeks.....\$550.00
 1 64" 3-drum J. A. Fay & Co., fine order.....\$500.00
 1 60" 3-drum Columbia Sander in A-1 condition.....\$600.00

JOINTERS

1 20" Carrey and Joints.....\$100.00
 1 30" Buss Extra Heavy Hand Jointer.....\$125.00
 Woodworking machinery of all kinds.
 Write, stating your requirements.

CLEVELAND BELTING & MACH'RY CO.
 1922 Scranton Road Cleveland, O.

ELECTRIC ELEVATORS

Complete first-class used equipments to meet all conditions and inspections. Installed ready to run, or will sell machines separately at a big saving.

KINZIE ELEVATOR WORKS
 5 E. Kinzie Street Chicago

Two Westinghouse 18"x22" Vertical Gas Engines D. C. to 180 K. W. 60-cycle 3-phase Generators.
 One 19"x22" unit, same.
 Large stock Electric, Steam and Gas Apparatus. Ask us.

EDGAR M. MOORE & CO.
 PITTSBURGH

Second-hand Machinery

44" Colburn Vertical Boring Mill.
 30" bar Binsee Horizontal Boring Machine.
 20" Barnes Drill.
 20" Snyder Drill.
 30" Bickford Radial Drill.
 6" Dresses Radial Drill.
 48" Gould & Eberhardt Gear Cutter.
 13"x6" Prentice Bros. Lathe.
 16"x6" Porter Lathe.
 18"x10" Draper Lathe.
 22"x17" Blaisdell Lathe.
 No. 2 Cincinnati Plain Miller.
 16" Garvin Shaper.
 24" Hendey Shaper.

Prentiss Tool & Supply Co.
 Singer Bldg., NEW YORK

WANTED**50 or 60 H. P. Oil Engine**

We are in the market for 50 or 60 H. P. Engine, burning gasoline or kerosene, second-hand, but first-class condition. State age, condition and price.

Pidgeon-Thomas Iron Co., Memphis, Tenn

FOR SALE CHEAP

One Land Pile Driver, 3000-lb. hammer, 50 ways and steel rollers.
 Four Steel-Guyed Stacks, 8'x100'.
 One Steel Self-Supporting Stack, 10'x180'.

CENTRAL TRANSFER CO.
 415 N. Front St BALTIMORE, MD.

**FOR SALE
PIPE NEW & SECOND HAND**

Furnished with Threads and Couplings.
 Suitable for All Practical Purposes

All Sizes In Stock Ready for Shipment

Send us your inquiries and get our prices. It will interest you.

Eagle Pipe Supply Company, Inc.
 45 Broadway N. Y. C.

FOR SALE**P I P E****Second-Hand**

All Sizes, 1/2" to 24"

Furnished with new threads and couplings, suitable for every practical purpose.

Also large assortment of Contractors' Equipment, Hoisting Engines, Boilers, Concrete Mixers, etc.; all thoroughly overhauled.

Marine Metal & Supply Co.
 167 South St. NEW YORK

MOTORS and DYNAMOS

For Sale or Rent

A. C. OR D. C., ANY SIZE

We repair and rebuild electrical machinery. Prompt service. Positive guarantees.

PAN ELECTRIC MFG. CO., 735 S. 4th St., ST. LOUIS, MO.

Water Tube Boiler**FOR SALE**

One 150 H. P. Babcock & Wilcox Water Tube Boiler, thoroughly overhauled and inspected by Hartford Steam Boiler Inspection & Insurance Co., with an allowance of 150 lbs. pressure.

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 Any delivery. Inquire for prices.
 We are always in the market for old rail-way material and relaying rails.
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 LARGE TONNAGES—Carload and less carload lots, advantageously located for Southern delivery.
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PROMPT DELIVERY,
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1 No. 14 Smith Mixer on steel skids with steam engine, power tilt, batch hopper; capacity, 46 cu. ft. dry.
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RAIL BRACES (5)



NEW FIRST QUALITY
Steel Tee Rails Standard A. S. C. E.
Sections Weighing
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WITH ALL NECESSARY COMPLETE FASTENINGS
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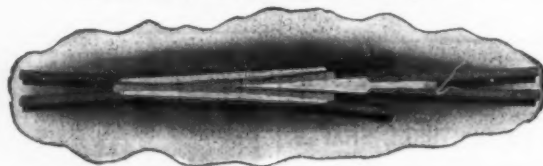
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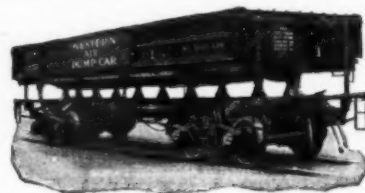
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or any work where the train must pull right out to save a tie-up. Western Air Dump Cars dump their load clear, and there is absolutely no delay. Designed and made right and of the best material. Endorsed and used by some of the largest railroads and contractors.

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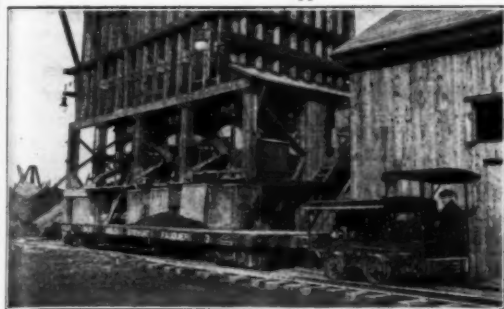


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industrial and contractors' locomotives are built for the most strenuous kind of work, and they stay on the job.



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The illustration shows a contractors' design of locomotive, adapted to industrial switching service. This locomotive is of 3' 6" gauge, and weighs 19½ tons. Strong frames and bumpers, a large boiler, and ample water capacity, are a few of its good features.

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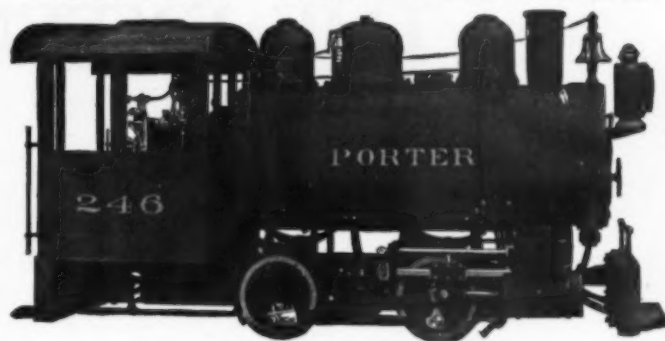
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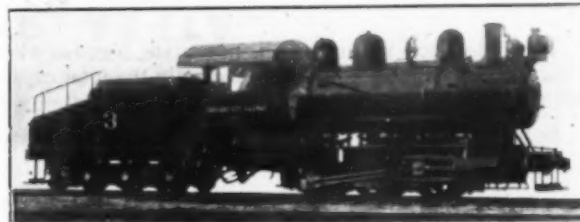
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Built in all sizes, designed to combine power and quick movement of cars. Duplication of orders prove their satisfaction. Write for Catalogue "O."

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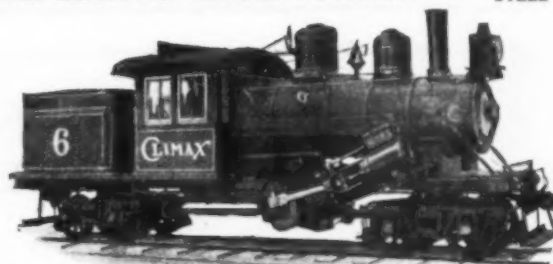
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DAVENPORT LOCOMOTIVE WORKS, Davenport, Iowa

"Chicago Pneumatic" Fuel Oil Driven Air Compressors

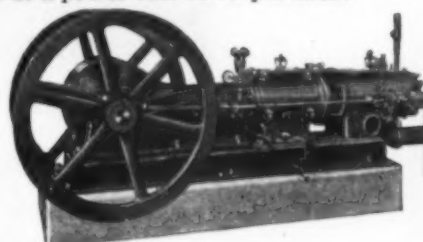
200 cubic ft. of free air per minute delivered at 100 lbs. pressure at a power cost of 9c. per hour.

DIRECT CONNECTED
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Will run on Crude Oil, Fuel Oil, Engine Distillate, Kerosene, Solar Oil or Gasoline.

Has Valveless Two-Cycle Power Cylinder; Governed Fuel Injection; Hot Plate Ignition; Crosshead Construction; Perfect Scavenging.

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Type N-SO "Chicago Pneumatic" Air Compressor.

Four Sizes—70 to 300 cu. ft. per minute free air capacity. Stationary, Skid Mounted (Semi Portable) or Truck Mounted for Field Work.

Send for Bulletin 34-K

CHICAGO PNEUMATIC TOOL CO.
1059 Fisher Bldg. CHICAGO
Branches Everywhere
52 Vanderbilt Ave. NEW YORK

THE EXTENSION HEAD

The problem of a movable or multiple dumping point is met by us in three different ways, the choice being governed by the conditions of service.

It often happens that a tramway is called upon to dump waste material onto a permanent spoil bank. The illustration is that of a coal mine which dumps its slate and gob over the crest of the mountain into a valley beyond. Ultimately this spoil bank will extend across the entire valley, a distance of 2000 feet, and in the bottom of the valley will show a height of say 200 feet. Such a spoil bank will contain an immense amount of material, and will serve for many years of continuous operation. In such a case it is not convenient to allow the tramway to extend itself along the top of the embankment which it creates.

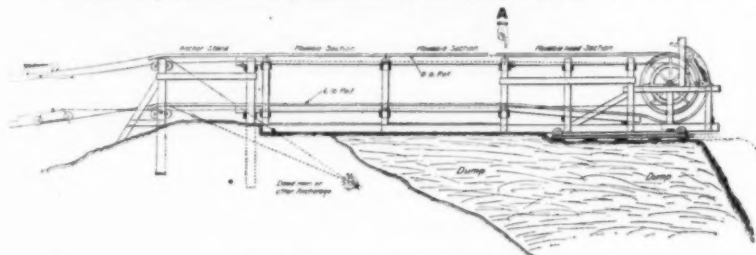
The cables of the tramway are anchored permanently at the crest of the mountain. They deliver the car in the usual way to an anchor stand, which in turn connects with a series of movable sections framed out of light timber and carrying a light T rail for the top and bottom lines. These sections may be made of any desired length, 10 feet being found practical in this case.

The removable sections connect to the frame of the dumping wheel, which is mounted on flanged wheels running on a movable rail resting on temporary ties, exactly like a steam shovel.

In dumping, the waste material is thrown away from the dumping head with considerable force, and gradually builds up the embankment, as indicated by the dotted line. When the embankment is so high as to interfere with free dumping, it is roughly leveled off on the top by hand placing, so as to receive the ties for the next shift. The dumping head is then disconnected at point "A," rolled forward on loose rails, say 10 feet, the length of a section, and the gap filled with another section. One piece of haul rope is then taken out between any two cars and a correspondingly larger piece inserted. This completes the operation, the whole thing requiring an hour or so to shift.

The little piece of haul rope is not waste, because when the dumping head is advanced a distance equal to half the interval between the cars, a new car is coupled in to maintain the total capacity, and the various pieces of haul rope, having been preserved, are used over again on further extensions.

In this way the tramway continually creeps ahead, using its own dump as a foundation.



EXTENSION DUMPING HEAD

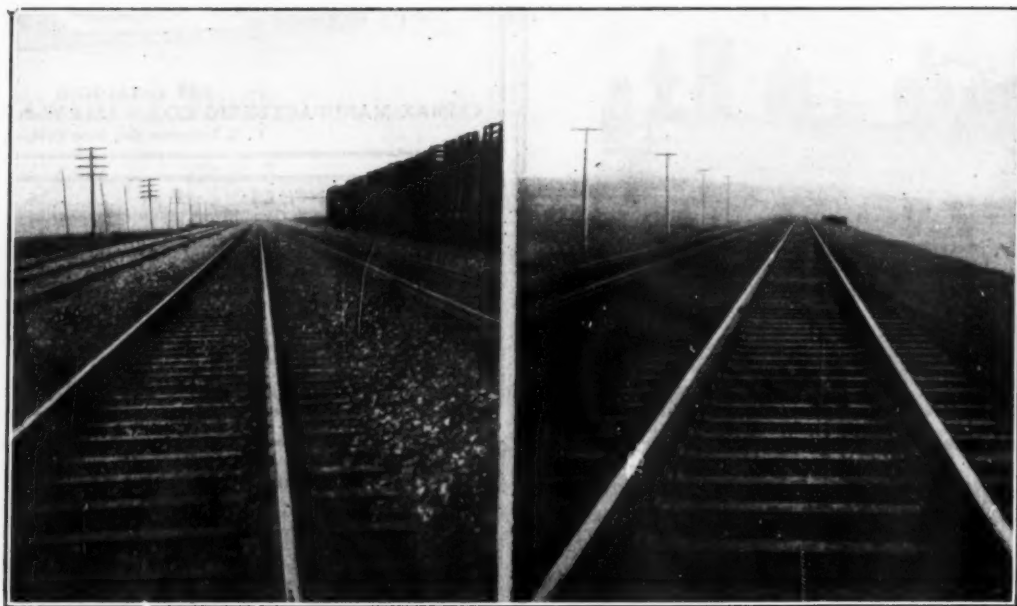
We have a suspended terminal used under other conditions, and still other requirements call for dumping cars. These will be considered separately.

Respectfully submitted,

AMBURSEN COMPANY,
Tramway Department
61 Broadway, New York

CARNEGIE STEEL COMPANY

GENERAL OFFICES: PITTSBURGH, PA.



In your "SAFETY FIRST" crusade, do not neglect the safety insured by tracks laid with steel crossties.

Full information cheerfully given.

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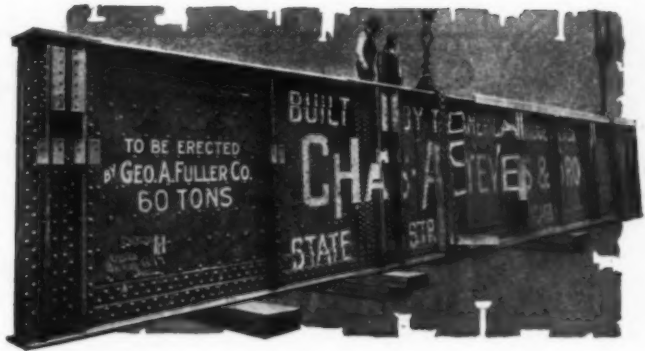
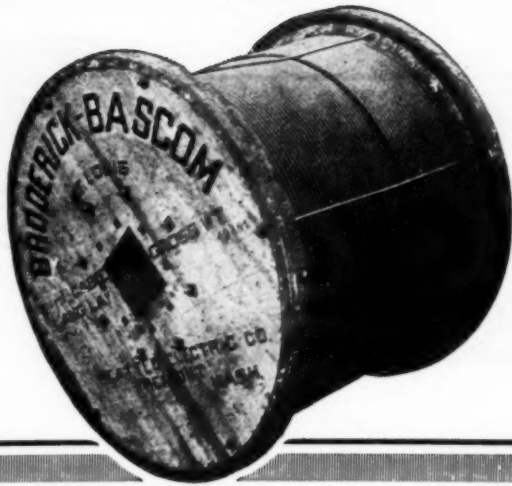
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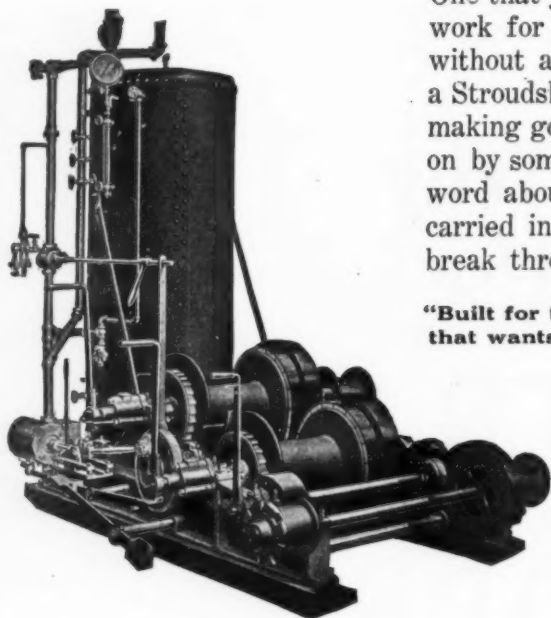
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One that you can put "on the job" and feel satisfied that it will work for you continuously—night and day when necessary—without any annoying breakdown. Such a hoisting engine is a Stroudsburg. They are not an experiment, as they have been making good in all sections of the country for years. Insisted on by some of the leading contractors in the country. And a word about Stroudsburg Service—duplicate parts are always carried in stock to save delay in case a part should wear or break through some unavoidable accident.

"Built for the man
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The up-to-date
Contractor's favorite

BUILT FOR EVERY PURPOSE

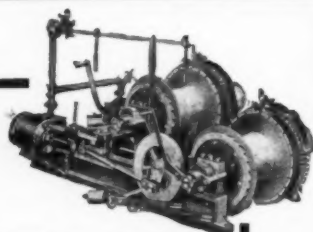
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LIDGERWOOD HOISTS

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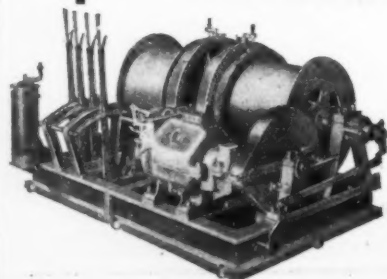
Our catalogue describes types of hoists devel-
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Electric Hoists built in any size. Steam, up
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More than 37,000 Steam and Electric Hoists
built and used.

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We Manufacture Locomotive Cranes Only OHIO LOCOMOTIVE CRANE COMPANY

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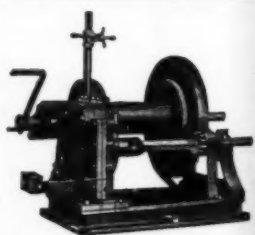
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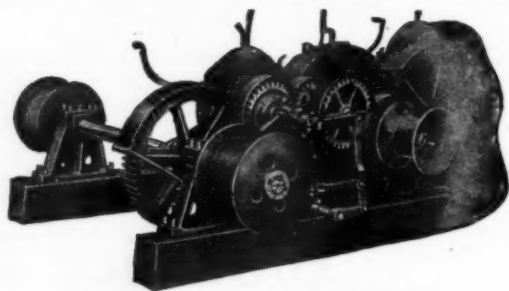
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The Werner-Flory Patent Boom Swinger

This Swinger can be attached to any hoist. If your
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We build hoists for every requirement. Mines,
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40,000,000 Revolutions

at a Speed of
560 R. P. M.

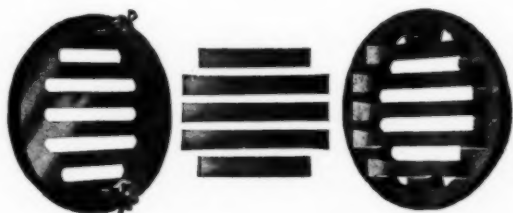


Illustration Made from Unretouched Photograph

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After operating a valve over forty-million revolutions at the remarkable speed of 560 R. P. M. it was removed, not only in perfect condition, but still retaining its original coil-stock curvature.

This unusual test, at double ordinary compressor speed, proves that the



Laidlaw Feather Valve

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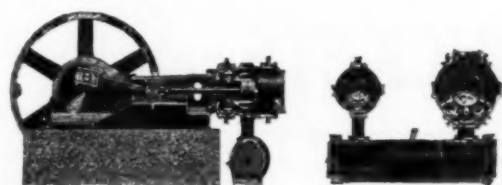
Solves the Air Valve Problem

The valves are thin strips of non-corrosive steel, similar in appearance to clock spring stock. These very flexible strips seat tightly on ground face-slotted seats, and in opening flex against slotted guards, curved to permit proper opening for the passage of air, the end of the strips remaining in contact with the seat at all times.

The Quietest, Simplest, Most Durable, Most Efficient Compressor Valve.

Seats by *Contact*, and *not* by *Impact*.

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Works: Cincinnati, O.

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Single and Double Drum Hoists

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Any Angle—Any Depth—Anywhere
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For Conveying Logs, Slabs, Saw Dust, Etc.



Hand-welded, of a special mix Wrought Iron, of **HIGH TENSILE**, equal in wear to **STEEL**, yet sufficiently fibrous to permit of jars and strains with little tendency to **CRYSTALLIZE**, a feature not found in Machine or Die Weld Steel Chains.

Each link gauged to insure accuracy of pitch.

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Hooks, Rings, Shackles, Swivels and other Hand-made Forgings furnished attached to chain or separate, all forged with the grain of the material.

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Bay City Land Dredge, 43' Span, $\frac{1}{4}$ Cubic Yard Dipper, Gas Engine Power. Operating Crew, Three Men.

THE BAY CITY LAND DREDGE

Is being used with profit for all kinds of ditch, drainage and irrigation excavation. For land work the Dredge spans the ditch, and is built in several sizes from 14' to 45' span. For water-work, mounted on a float, the Dredge is equally efficient. The steel construction provides a light but strong machine. Operated by three men. Engine uses gasoline or kerosene. Self-propelling. Quick and economical in operation. Can be dismantled, handled on wagons over country roads, reassembled at small cost and used to advantage on small jobs. Low operating costs, low maintenance charges and large capacity have made low cost records.

**PRACTICAL
EFFICIENT**

**ECONOMICAL
THOROUGHLY DEMONSTRATED**

Ask us for detail information.

BAY CITY DREDGE WORKS

2609 Center Ave., BAY CITY, MICH.

BYERS BABY Excavator and Ditcher

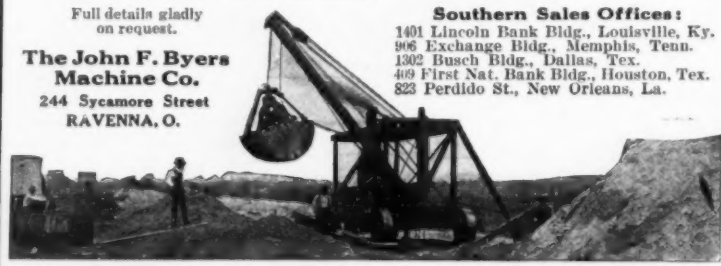
Invaluable for smaller ditching jobs; handling sand and gravel, loading and unloading, etc. It is light and portable, low upkeep and operating cost, needs no expert engineer and works rapidly. Byers Baby will save you money, Mr. Contractor.

Full details gladly
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Machine Co.**
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The Thew Gasoline Shovel—A Demonstrated Success

No fireman necessary—strictly a one-man shovel.
No licensed engineer required—No State or local boiler rules to be observed.

Fuel Cost Per Hour—Two Gallons Gasoline—20 to 30 Cents

No expense for hauling coal—No extra time getting up steam or banking fires.

No difficulty about water supply—No freezing in winter.

No boiler insurance, no boiler injector troubles, no expenses for boiler maintenance.



Type O Thew Shovel— $\frac{1}{4}$ -yard dipper

Thew Steam Shovels have achieved an enviable reputation. This is a modification of the steam shovel only as affecting the operating mechanism and the power unit.

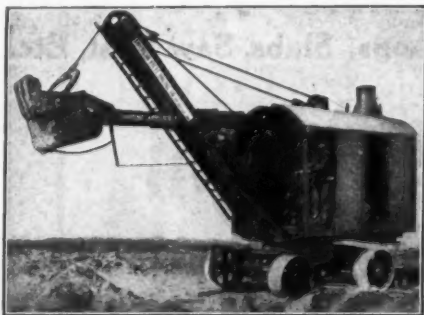
Thew Electric Shovels have been in successful use for more than ten years. We have taken the standard electric shovel and have merely substituted for the twenty horse-power motor a thirty-five horse-power two-cylinder gasoline engine of approved design and established reputation. NOT AN EXPERIMENT.

The Owner of a Thew Gasoline Shovel Writes: "The THEW gasoline shovel outclasses steam two to one. A green operator loaded one hundred and ninety-five two-yard wagons in nine hours, good hard digging on a six per cent. grade loading in the rear and waiting for teams at least ten per cent. of the time. I think it the coming shovel."

Write for Copy of Circular M.



THE "SINGLE-LINE SHOVEL"



New and Exclusive
Features.

Built with the
strength and economy
of an American Steel
Dredge.

One Man Operation

New Bulletin
just issued.

Unequalled for ROADS and STREETS, CLAY, SAND
and GRAVEL Plants.

AMERICAN STEEL DREDGE CO., Ft. Wayne, Ind.



"Standard" Contractors' Grab.

M-M GRAB

BUCKETS

Built in All Styles for Every Purpose

If you have any kind of digging to do, we are certain it would be to your advantage to investigate the Mead-Morrison line before buying. M-M Grabs are of superior design and of the simplest and most practical construction. Tell our engineers your proposition and let them suggest the style bucket best suited for your work.

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"Standard" Orange Peel Grab.

Mead-Morrison Mfg. Company,

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WILLIAMS—That's All

THE CONTRACTOR

who is about to invest his money in equipment naturally considers, first, where he can purchase the BEST, MOST EFFICIENT and MOST PRODUCTIVE machinery, that which will give him maximum results at minimum cost. In buckets the answer is

THE WILLIAMS

as is testified to by continuous orders from the largest contractors.

The cut shown here is a WILLIAMS three-yard bucket, one of several recently purchased and used by The Bradley Contracting Co., of New York. This bucket is handling Earth and Stone excavated from the Lexington Ave. Subway. When the contractor purchases a WILLIAMS BUCKET several very important results have been obtained, he has the strongest, most rigidly constructed and most efficient bucket made, he has a bucket that will be on the job ready for service all the time, and he has a bucket that the manufacturers guarantee a saving of from 25% to 50% in maintenance cost over any other bucket made.

Are these points worth anything to you, Mr. Contractor?

If they are, better get in touch with THE WILLIAMS proposition, and do it now
Catalog and full information sent upon request.

THE G. H. WILLIAMS COMPANY,

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Fast Work in Swampy or Firm Soil Is Accomplished with the Monighan Walking Excavator



No. 3-T Monighan Walking Drag-Line Excavator, equipped with 60 ft. Boom and 3 cu. yd. Page Scraper Bucket, going through a cornfield on its way from station to work near Elsberry, Mo. W. E. Callahan Construction Co., Contractors.

On swampy ground the "Walking Traction" of the newest Monighan Drag-Line Excavator does away with the need for planks, skids or track.

Trackmen on the ground around the machine are eliminated entirely. The rapid-traction feature cuts down the required boom length. Let us explain how. A great dirt-mover for Railroad, Levee, Drainage, Irrigation or Big Foundation Excavation.

Write for Bulletin 16-W

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We can solve your digging or rehandling problem. Write for our interesting illustrated pamphlets.

DIGGING THE MODERN WAY

One of the most indispensable of modern labor-saving and work-speeding machines provided for the use of the contractor is the

HAYWARD BUCKET

Obstacles which continually confront contractors—hard, rock-filled soil, boulders, swampy land, tree stumps; almost everything except solid rock, can be handled quickly and cheaply by means of a Hayward Bucket designed for the purpose.

The illustration shows a 1 cu. yd. Hayward Orange Peel Bucket overcoming unusually hard digging conditions. The site being an old reservoir, the material dug and handled was overburdened with clay, rolled earth and cobblestones and also a form of cemented gravel.

THE HAYWARD COMPANY, BUILDERS OF DIGGING MACHINERY
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**Bank Washed Material
for All Purposes**

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Loading Gravel—a ton per minute

Buy a Link-Belt Loader because it will earn larger profits for you and systematize your yard-handling methods; load as quick as from an overhead chute, and screen just as well, or better. Buy a Link-Belt Loader because hundreds of coal dealers say they are dividend earners.

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All our Loaders are built to a high standard—the

Link-Belt Standard—and not to a low price. The reason you get more for your money is because Link-Belt Loaders are built in large quantities, which advantage enables us to effect economies in purchasing materials as well as in manufacturing.

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Hundreds of satisfied users will advise you to—"Buy a Link-Belt Loader". Read book No. 210, pages 38 to 41, which were written by coal dealers throughout the country—they carry a message you ought to read.

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No Chains To Break

The Henderson "Chain-less" Dump Wagon eliminates the annoying breakdowns and tieups caused by the chain breaking or links stretching.

The Henderson "Chain-less" also allows clearing of the load after dumping it, and the second load can be dumped on top of the first if desired. Can you do this with the wagons you are using? It is an established fact that the heaviest strain on a dump wagon is to clear the load after dumping.

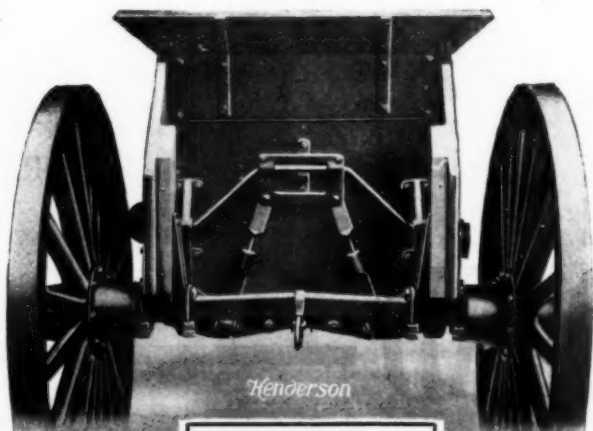
The Henderson "Chain-less" is operated by one-quarter turn of one lever without racket or dog. Made in 2, 2½ and 3-yard capacities.

It is entirely different from any other Dump Wagon you have seen or heard of and has many advantages that will interest you.

Here are the chief "reasons why" in a nutshell: (1) No chains to break or stretch. (2) Dumps load and pulls out clear instantly. (3) Can dump second load on top of first if desired. (4) Can do more work with fewer teams and men. (5) Are on the job working for you all the time instead of in the repair shop.

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Henderson Wagon Works
Incorporated
Henderson, Kentucky



End Box removed, showing position of End Bearing Shaft when wagon is loaded.



DO YOU HANDLE BULKY MATERIALS

SUCH AS

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Exceed all requirements for doing this work quickly and economically.

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Special Service—Our Engineering Department places at your disposal, etc. services of experts in this line and all the advice you want is free—Catalogs.

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ACME DUMP WAGONS Built for Hard Usage

Their special construction of tested and seasoned material makes them especially suitable for hard, continuous usage.

For simplicity, strength, efficiency, durability and ease of operation they are unequalled.

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DESPITE the present demands for explosives, our facilities for securing materials, the operation of extensive powder plants equipped with special machinery and expert employees, and ample storage and shipping arrangements enable us to promptly and satisfactorily fill all orders.

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Pave it with Asphalt which is *All* Asphalt

Standard Paving Asphalts, refined scientifically from Mexican Asphaltic Petroleum, are 99.8% pure bitumen.

This is not all. Standard Asphalts are more resistant to climatic changes, and have a greater cementing strength at both high and low temperatures.

Under average conditions, Standard Asphalt will cover more yardage per ton than other brands—often considerably more.

We shall be glad to tell you where Standard Asphalts have been laid, so that you may examine results. Also write for details and tests.

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In writing specifications for asphalt it is important to specify requirements that will insure high grade asphalt being used.

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embodies all these requisite merits, moreover, it is uniform—it has the advantage of being produced by men who have had a lifetime experience and study in the production of asphalt.

Aztec asphalt IS NOT one of the minor by-products of a large oil refinery.

It is a straight natural asphalt refined from Mexican Maltha, and is not a blend of odds and ends of various light asphaltic oils and semi-asphaltic oils, the residue of the distillation of products from various oil fields.

Our chief business is the production of asphalt. It is our aim to produce the best asphalt possible for all purposes, and results speak for themselves.

Let us send you a model form of asphalt specifications for various types of asphalt pavement.

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See Sweet's Catalogue, Engineering Edition, for details and specifications of Aztec Products

Save $\frac{1}{3}$ On Your Paving

THE LUTZ Surface Heater

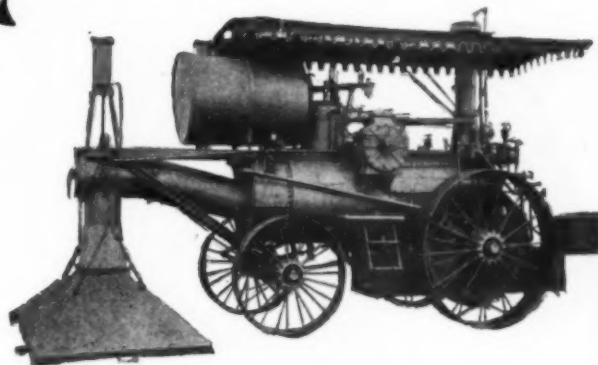
Resurfaces old streets of all kinds with asphalt at a saving of $\frac{1}{3}$ or more. Uses the old asphalt with a small addition of new material. The Lutz softens the old asphalt with hot air without injury. Works without interrupting the traffic. Let us send you "low cost" records and figure for yourself how much you can save.

Write for Illustrated Catalog.

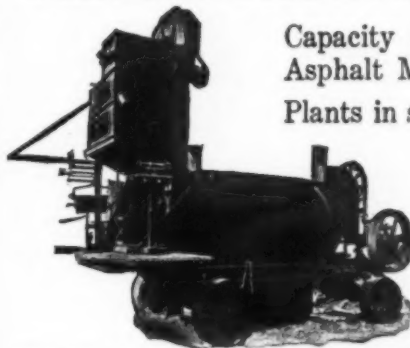
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Cummer Road Asphalt Plant



Capacity 1000 yds. 2" top or Asphalt Macadam per day.

Plants in stock.

Make test before buying.

Cummer one-car 2000-yard capacity plants in stock.

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Case Standard Cranes are the result of thoroughly tested ideas secured during many years from the best designing and operating engineers. They are manufactured under the most favorable conditions in a plant recently equipped at large expense for this particular purpose. They represent the greatest value for price charged.

THE CASE CRANE & ENGINEERING CO. - Columbus, Ohio

WATERBURY WIRE ROPE

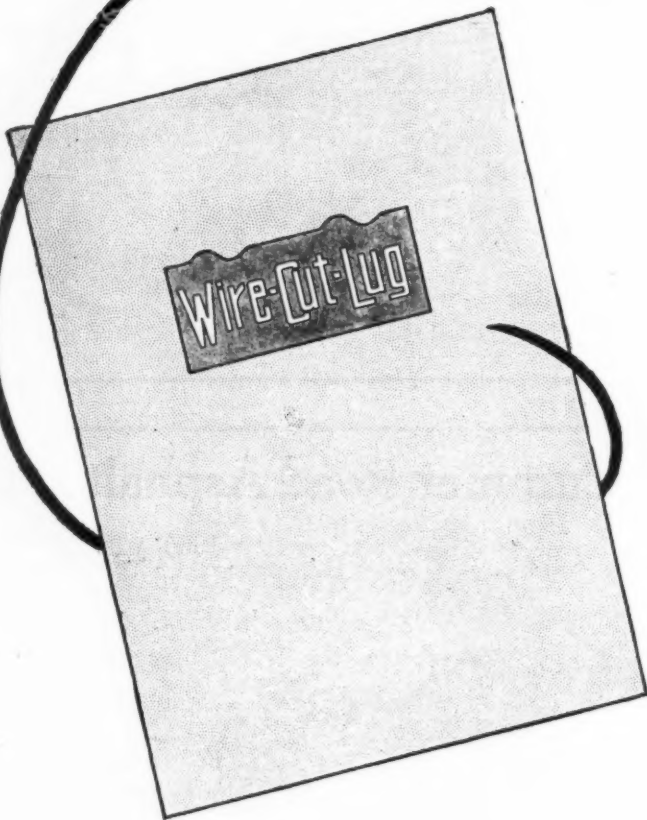


Standard Wire Rope, Manila and Sisal Cordage, Fibreclad Wire Rope. A Rope for Every Service. Write for Prices.

WATERBURY CO., 80 South St., NEW YORK

Chicago San Francisco Dallas Boston New Orleans

The present status of the wire-cut block is indicated by the fact that one-third of the manufacturers of paving brick, producing 53 per cent. of the total output, are now equipped to manufacture the wire-cut product, and it is estimated that about one-sixth of the present yardage is of the new type. The increase in its use should be rapid, but will naturally be checked by the inertia experienced in changing from any well-intrenched product. This is particularly true when laymen (who frequently pass on paving material) are to choose between a rough, apparently carelessly made article, whose intrinsic merits are not shown by surface indications, and a smooth, attractive material. It is in this situation that engineers, fortified by investigations as to intrinsic value, need to exercise their influence.—From an Editorial.



Let that book
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DUNN Wire-Cut-Lug BRICK

Its sub-title is "Why Wire-Cut-Lug Brick is the most dependable and permanent Paving Material."

It tells why, in detail.

It tells the advantage of the "rough made" article. It points out how the roughness produced by wire-cutting means a **better bonding surface**.

It tells how wire-cutting produces brick of sharp edges, with uniform lugs.

It tells how labor costs in brick pavements can be reduced. It tells about our free engineering service.

If you want to get the SALIENT POINTS of a problem that is one of the most widely discussed among engineers today, this is the little publication you want.

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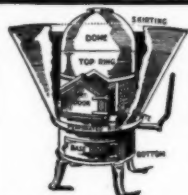
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Smooth—Sanitary—Permanent

RAIL and WATER DELIVERY

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Even if New York were
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"The Sandwich Joint"

For streets of all kinds; curbs; pavements
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With the Carey Elastite Expansion Joint
only about one-half as much time is needed
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BEST TESTERS AND MOST DURABLE

THE CARLYLE PAVING BRICK CO., PORTSMOUTH, O.

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CRUSHED STONE

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FOR BALLAST, CONCRETE, MACADAM, ETC.
Large Output—Prompt Shipments. Ask for Quotations

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HIGH EXPLOSIVES FOR EVERY PURPOSE.

FARMING DYNAMITE for sub-soiling, ditching and tree-planting.

BLACK BLASTING POWDER.

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PERMISSIBLE POWDERS passed by the Bureau of Mines, Depart-
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SPECIAL POWDER in all grades for all kinds of mines

All Made in Our Own Factories under the Supervision of Experts

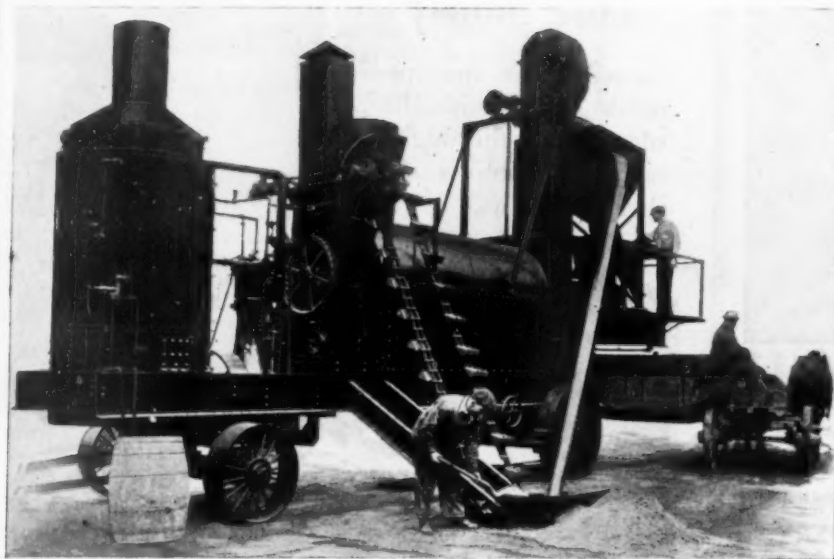
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SUCCESSORS TO { Aetna Powder Company, Keystone National Powder
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Minimum capacity 800 sq. yds. 2 in. sheet asphalt per day. Much larger capacity for asphaltic concrete, Topeka mix or macadam.

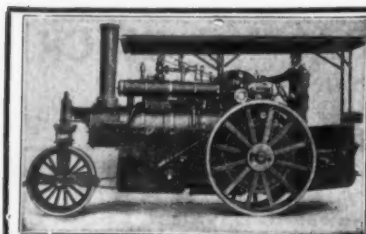
A Perfected Plant with these Distinctive Features:

Elevated, one-man mixing platform; 7-foot mixer with two sets blades; sand-measuring box and asphalt bucket on scales; efficient, large capacity drying drum; Massachusetts-Ohio standard boiler of large capacity; material chutes and mixer have removable steel wearing plates; chilled rims for all chain sprockets.

Supplied without boiler and engine if desired.
Send for specifications and descriptive literature.

Iroquois Works: The Barber Asphalt Paving Company
178 Walden Avenue, BUFFALO, NEW YORK

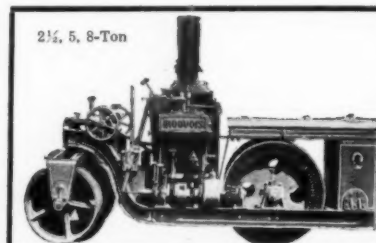
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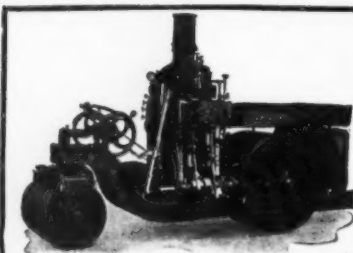
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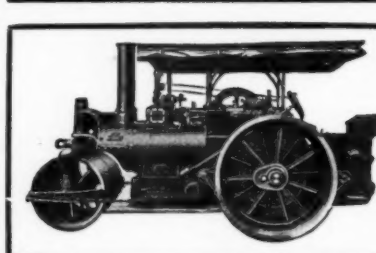
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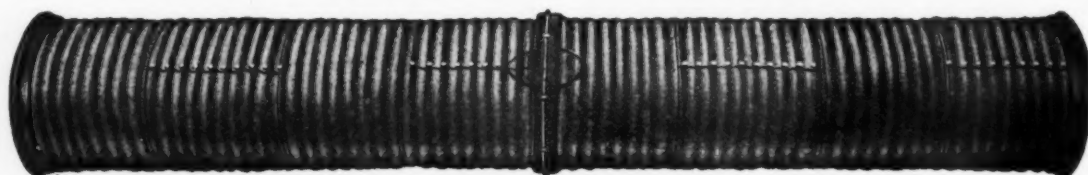
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QUALITY OF MATERIAL USED IS THE FINEST AND PUREST KNOWN
CONSTRUCTED BY EXPERIENCED WORKMEN ALONG MODERN LINES
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You Can Crush to Suit Your Trade

with a
JEFFREY Type A STONE PULVERIZER



The fine product of this machine is ideally suited for ROAD TOP DRESSING or FILLER.

It Satisfies the Road Inspector's Demands and insures a constant supply of Screenings at less cost than you can buy them.

It gives excellent service in the making of STONE FOR CONCRETE.

From the Fines and Dust are being made Roofing, Fluxing and Finishing Stone—Agricultural Fertilizer—that means "Increased Crops and Profits."

Every Road Contractor should have a copy of Bulletin No. 142-26, telling all about this machine. Request it—NOW

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AMERICAN INGOT IRON "ARMCO" CULVERTS

99.84% PURE IRON

Demand

Triangle Brand on Every Sheet
This Triangle Trade-Mark is
YOUR PROTECTION

TENNESSEE METAL CULVERT CO.
Nashville, Tenn.



Genuine
"Open-Hearth"
IRON
(99.875% Pure)

CULVERTS

Low relative prices and high quality won't mix.
These culverts are sold on quality basis only.

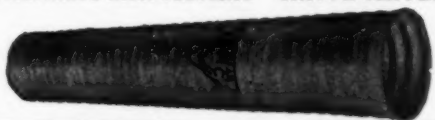
THE NEWPORT CULVERT CO., Inc. NEWPORT, KY.

"GENUINE" "ARMCO" AMERICAN INGOT IRON CULVERTS

99.84 Per Cent Pure

Pure Iron; K. T. Water
Gates for Irrigation;
Silo; "The Lennon Metal
Flume."

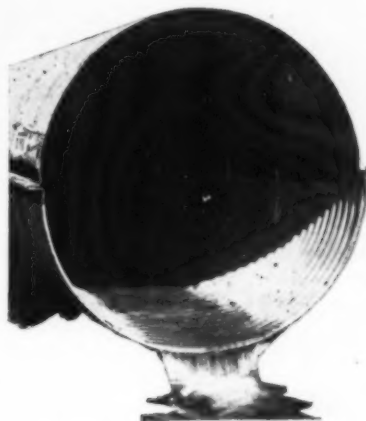
LONE STAR CULVERT CO
Houston, Texas



"ACME" (NESTABLE)

Anti-Corrosive NO-CO-RO METAL

Corrugated Culverts are STRONG Culverts



They are made in heavy gauges. The method of joining the sections—

and the overlapping of the deep, bridge-like corrugations—

insure that they will NOT crack, crush, sag nor come apart—

under the heaviest fills— or practically no fill at all.

They develop no "weak spots." The NO-CO-RO METAL (99.90 per cent. pure iron) of which they are made resists corrosion to the utmost.



The result is a *strong showing* as regards absence of maintenance costs. Their whole story in Catalog G-9. Write.

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THE CAROLINA METAL PRODUCTS COMPANY, Manufacturers in Wilmington, N.C.

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Building Concrete Paving

Washed Gravel

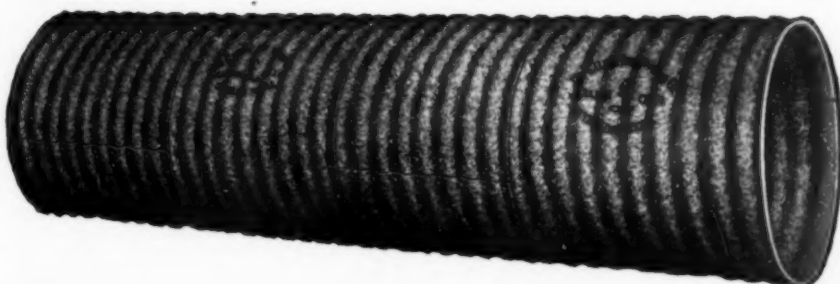
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Galion Sterling Metal Corrugated Culverts



are approved and specified by many of the world's leading Engineers, Highway Authorities and Contractors.

Highest Grade Material combined with most skilled workmanship make this the culvert of Greatest Purity, Strength, Durability, Economy and Efficiency. Sterling Metal used in these culverts resists corrosion longer than any other metal used in sheet metal culverts—giving you culverts that last longer than all others.

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7 WHITE TRUCKS

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35 WHITE TRUCKS

GREENFIELD ELECTRIC LIGHT & POWER CO.
10 WHITE TRUCKS

GIMBEL BROTHERS
54 WHITE TRUCKS

ARMOUR & COMPANY
73 WHITE TRUCKS

THE CLEVELAND AMRON BAG CO.
19 WHITE TRUCKS

W.B. SLOANE
16 WHITE TRUCKS

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10 WHITE TRUCKS

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12 WHITE TRUCKS

CITY OF PITTSBURGH
15 WHITE TRUCKS

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19 WHITE TRUCKS

ATLANTIC ICE & COAL CORPORATION
15 WHITE TRUCKS

White Building Makes White Truck Performance a Law unto Itself in Length as in Perfection of Service

COMPARISONS may be "odious," but they eliminate the unfit.

The comparative test of side-by-side service is the only fair way to find out which truck is doing the work steadiest, at lowest cost and for the longest time. Because of such tests White Trucks predominate in most large fleets in the country.

Faithfully, year in and year out, a White can be relied on to do your work at a big saving per ton mile. It keeps, practically, in constant commission, and operates with mechanical perfection which is almost a "thinking" intelligence.

And in a short time it pays for itself

with big dividend on the investment. And long after the time when, judged by ordinary standards, it would have ceased to exist on the company's books, the White keeps on going.

It stays on the job; it defies the junk pile; it knocks into a cocked hat all previous ideas of motor truck "depreciation."

Efficiency reasons dispose of the laggards in all departments of the world's work. They explain the striking preponderance of White Trucks. Ask any White owner; he has figured it out in dollars and cents.

We shall be glad to make suggestions on your trucking problem.

Exhibiting at the Transportation Building, Panama-Pacific International Exposition, San Francisco

THE WHITE COMPANY

CLEVELAND

LARGEST MANUFACTURERS OF COMMERCIAL MOTOR VEHICLES IN AMERICA

JOSEPH HORNE CO.-38 WHITE TRUCKS

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KAUFFMANN'S

GLACIER PARK TRANSPORTATION CO. 16 WHITE TRUCKS

STERN BROTHERS - 18 WHITE TRUCKS

BUTTER-NUT BREAD

THE ROSEBAUM CO. 35 WHITE TRUCKS

Since these illustrations appeared in the Manufacturers Record it has been necessary to remake this plate because 111 trucks have been added to above fleets

NOTE—In the last 10 days 29 additional White trucks have been delivered, thus making total 140 in place of 111

New York - - - Broadway at Sixty-Second Street
 Chicago - - - 2635-2645 Wabash Avenue
 Philadelphia - - - 216-220 North Broad Street
 Boston - - - 930 Commonwealth Avenue
 San Francisco - - - Market St. and Van Ness Ave.
 Baltimore - - - Mount Royal and Guilford Avenues

Pittsburgh - - - Craig Street and Baum Boulevard
 Atlanta - - - 63-65 Ivy Street
 St. Louis - - - 3422 Lindell Boulevard
 Washington - - - 1233 20th Street, N. W.
 New Orleans - - - 750 St. Charles Avenue
 Newark - - - 33-35 William Street

Seattle - - - 1514 Third Avenue
 Memphis - - - 278-280 Monroe Avenue
 Dallas - - - 2025-2027 Commerce Street
 Toronto - - - 14 Alexander Street
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Hemispherical and Segmental Bottoms

Manufactured at Pittsburgh, Pa.
Erected Anywhere

We have special designs for Municipal, Rail-
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Catalog No. 3 sent upon request.

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Pittsburgh, Pa., 803 Curry Bldg. New York City, 54 Church St.
Dallas, Texas, 1230 Praetorian Building
San Francisco, Cal., 4316 Rialto Bldg.

Des Moines Bridge & Iron Co.

Des Moines, Iowa, 946 Tuttle St.

LOWELLVILLE, OHIO
Capacity 50,000 gals.
Height 119 ft.



City Water-Works, Virginia, Minn.

"The Tanks with a Reputation"

WATER-WORKS SYSTEMS

For TOWNS and VILLAGES

should comprise an elevated steel Tank of
this style to be the most efficient and eco-
nomical. It gives more pressure than a
standpipe and costs no more than a wooden
tank in the larger sizes generally used.
In putting in a

Caldwell Steel Tank and Tower

you are assured of a job that is designed
right and built right and costs the least to
produce of any on the market by reason of
the superior facilities our big modern Struc-
tural Steel Plant for this class of work
gives us.

25 Years' Experience.

We erect anywhere.

Send for illustrated catalogue and Book of
Testimonials.

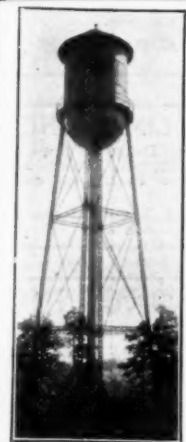
W. E. CALDWELL CO., Louisville, Ky.

INCORPORATED

Tanks { Steel-Wood } Towers

{ Galvanized } Towers

Wind Mills—Pumps—Gas Engines 12



Ware Shoals Mfg. Co.,
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We Specialize in the
Design, Manufacture and Erection

ELEVATED STEEL TANKS AND STAND PIPES

for Municipal, Railroad and Factory Service. We also
build oil tanks, coaling stations, bridges, turn tables,
buildings and structural material.

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Greenville, Pa., 104 Pine St.
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The South's Power in the South

Are you interested in machinery of any kind? If so, write the undersigned:

We are Southern Manufacturers and Make our own
Engines and Boilers and guarantee them; when you deal
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Our Engines and Boilers are now in use in many of the Gineries, Oil Mills, Saw
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TANKS, TANKS AND TOWERS, SMOKE STACKS AND ALL KINDS OF BOILER WORK

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Also carry large stock Mill Supplies, Pipe, Roofing, Belting, Fittings, etc.

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Tanks Anywhere for
Any Service

If Made of Steel We Make It

Structural Steel Work

Chattanooga Boiler & Tank Co.

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ELEVATED STEEL

TANKS TOWERS

Mechanically Correct in Design and Workmanship
Any Size. Erected Anywhere

Structural Iron Work Stand Pipes Boilers

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A Quick Loader

The American Steam Shovel is
a quick loader. A new cata-
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in buying or operating. A sim-
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shovel.

The American Clay Machinery Co
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MEMPHIS STEEL
CONSTRUCTION COMPANY
OF PENNSYLVANIA

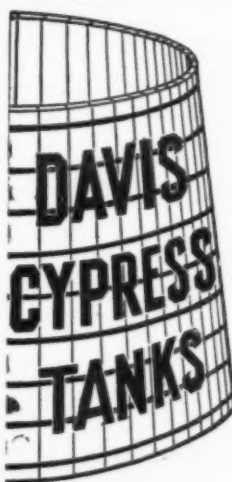
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(In the Pittsburgh District). OFFICES: 1001 First Nat. Bank Bldg.
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Builders of Railroad and Revolving Type Steam and Electric Shovels,
Dipper, Elevator and Hydraulic Dredges, Scraper-Bucket Excavators,
Ballast Unloaders, Railroad Ditchers and Log Loaders.

Station H

MARION, OHIO



"Can't Leak and Won't Warp"

A Davismade Tank

is the combination of
Cypress of the highest
grade and twenty-five
years' experience in our
special line.

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G. M. DAVIS & SON

PALATKA, FLA.

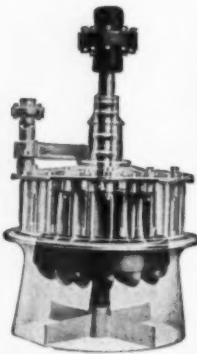
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If you are contemplating the development or improvement of a water-power it is to your interest to write us. Our competent hydraulic engineers shall be glad to give you any information that you may need about the installation of water turbines.

Samson Turbines use the water economically; the speed is quick and steady; they develop great power.

Write us today for catalog.

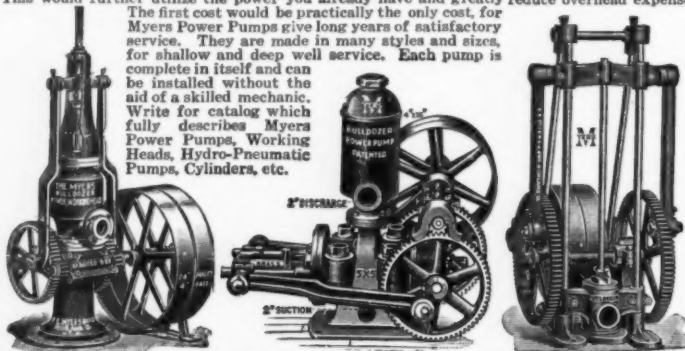
JAMES LEFFEL & CO.
310 Lagonda St. Springfield, Ohio



MYERS POWER PUMPS AND WORKING HEADS FOR FACTORY WATER SUPPLY SYSTEMS

Have your own Water Supply System by installing a Myers Power Pump or Working Head. This would further utilize the power you already have and greatly reduce overhead expense.

The first cost would be practically the only cost, for Myers Power Pumps give long years of satisfactory service. They are made in many styles and sizes, for shallow and deep well service. Each pump is complete in itself and can be installed without the aid of a skilled mechanic. Write for catalog which fully describes Myers Power Pumps, Working Heads, Hydro-Pneumatic Pumps, Cylinders, etc.



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EMERSON STEAM PUMPS

Foot Valves and Quick-Cleaning Strainers

For All Construction Work, Mining and Irrigation

Emerson Steam Pumps work perfectly completely submerged. Emerson Pumps will suck up 45% of air with mud, sand and water. No other pump made will do either.



EMERSON "STANDARD"
A Giant in Efficiency

Emerson Pumps
HAVE
No Plungers
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Write today for
Illustrated Article:
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Emerson Pumps
REQUIRE
No Special Engine
No Foundation
No Shafting
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Let us solve your Pumping Problems. 1915 Catalog on Request.

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ALEXANDRIA, VIRGINIA

MORRIS MACHINE WORKS

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Centrifugal Pumping Machinery and Steam Engines



Specially Designed
PUMPS

FOR

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"Deane of Holyoke"

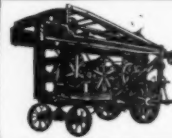
Most efficient
type of deep
well pump.

**GLENDORA
DEEP WELL PUMP**

Most Economical for pump-
ing from a deep well di-
rectly into a tank

Established 1885

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KEYSTONE CABLE DRILLS

For Artesian Water Wells; Oil, Gas and Mineral Test Wells;
Blast Holes in Heavy Excavation. A complete line of Traction
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In writing for catalog describe work.

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Downie Double Stroke DEEP WELL PUMPS

Steam or Electric Driven, or geared from shaft, are offered for service
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Single Stroke Pumps for lighter deep well work. Catalog No. 6.

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Own a machine of your
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Many styles and sizes for
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In any quantities. Deliveries to points
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and complete pumping plants
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Hydraulic Turbine Builders

Manufacturers of **McCORMICK TURBINES**

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Branch Offices—176 Federal St., Boston. Chicago Office, 644 American Trust Bldg.

HOLLAND SLOW-SPEED NON-CLOGGING CENTRIFUGAL PUMPS

for all kinds of liquid and semi-liquid materials. Specialists in centrifu-
gal pumping adaptations for all manufacturing and industrial purposes.

HOLLAND MACHINE CO., 90 West Broadway, NEW YORK

TURBINE WATER WHEELS

Highest Efficiency. Both CYLINDER and Register Gate

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DAVIS FOUNDRY & MACHINE WORKS Rome, Ga.

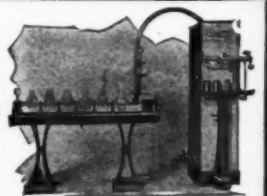
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The CLARK METER BOX, a thoroughly demonstrated success
throughout many years of actual service in Water Departments;
furnished in Fifty-three models regularly, and in any special
construction desired.

The CLARK METER TESTER now furnished in six different
complete Machines, including scale and
tank; also made up in any special manner
to suit customer.

Our new loose-leaf Catalog "N." showing
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Appliances, will be mailed on request.

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The Clark Meter Tester

Pipe Cutting and Threading

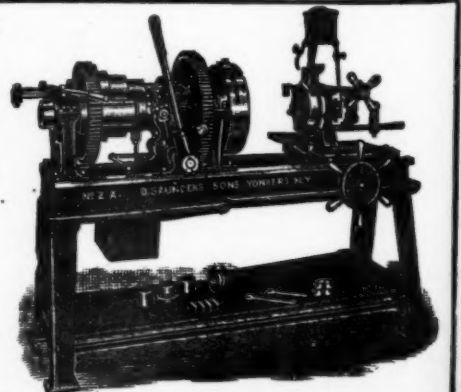
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All Sizes for Pipe Mills
Gas and Steam Fitters

This cut shows our 2 A
Improved Pipe Threading,
Cutting and Nipple Machine.
Range 1 to 2, inclusive.
Pipe can be gripped or
loosed without stopping the
chuck, by a simple move-
ment of the lever.

Write for Catalogue "C."

D. SAUNDERS' SONS, Inc.
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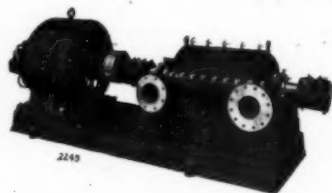
PUMPS
for every purpose
Steam—Centrifugal—Power
Catalog on Request

2" Solid Bronze Centrifugal Pump direct connected to 5 H. P. Motor. In plant of Euston Process Co., Scranton, Pa.

Fairbanks, Morse & Co.
Atlanta Jacksonville New York

Platt Centrifugal and Turbine Pumps

are built in all styles and for every purpose. There are advantages in these Platt products that cannot be found in other makes. Let us send you our illustrated catalog and also names of some users. Our Engineers can tell you the solution of your problem. Write today.



**The Platt
Iron Works Co.**
Dayton, Ohio

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The Slogan of the Cameron—"Character: The Grandest Thing."



This Mine Superintendent Says:

"It may please you to learn that the

Cameron Centrifugal

recently installed in our Lee shaft to take the place of another leading make (which was worn out in three months) delivers 20% more water than the other pump did when new. This other pump is now in the scrap bin," writes the superintendent of a large coal company in Penna.

It is a Cameron 4" Double Suction Pump with a horizontally split casing and an enclosed impeller.

Let us tell you more about the efficiency of this pump. No obligation.

Write now for Bulletin No. 150

A. S. Cameron Steam Pump Works

11 Broadway, NEW YORK

Offices the World Over

R. D. WOOD & CO.

400 Chestnut Street

PHILADELPHIA, PA.

Centrifugal Pumps

ALL SIZES, BELT DRIVEN AND DIRECT CONNECTED

For Irrigation, Tanneries, Mine Drainage, Phosphate Mining, Circulating Water for Condensers, &c., &c.

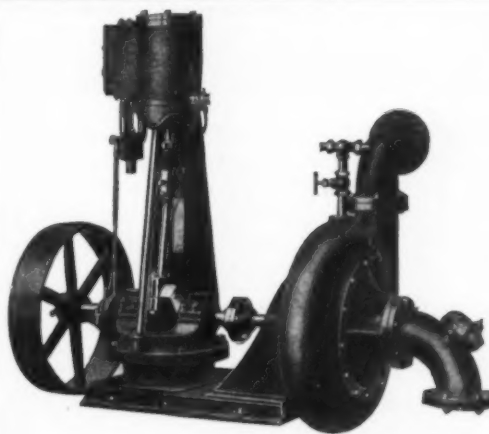
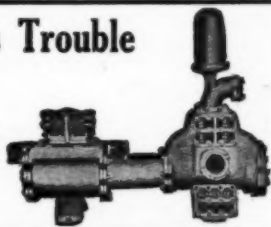
Less Working Parts—Less Trouble

This pump is simplicity itself. It has no valve gear, eliminating levers, small steam ports, packing rings, etc.

BLAKESLEE PUMPS

have fewer working parts than most pumps. They are strong and dependable. Write for Catalogue.

BLAKESLEE MFG. COMPANY, 27 Du Quoin St., DU QUOIN, ILL.



This is One of a Complete Line of Single Engine Direct connected ERIE Sand, Gravel, Dredging PUMPS

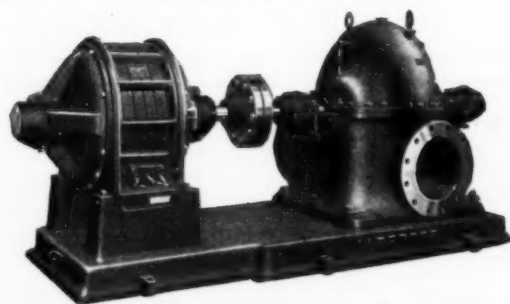
Which are suitable for a great variety of conditions. We are usually able to make prompt shipment and our prices are right.

Send for Bulletin B-30

ERIE PUMP & EQUIPMENT CO., Erie, Pa.

Successors to the Erie Pump & Engine Works

ALBERGER CENTRIFUGAL PUMPS



Alberger Type "C" Turbo Volute Pumps are designed for high speed motor or steam turbine drive.

These pumps are of the double suction impeller type with casing divided on the horizontal center line, so that the upper part may be readily removed. The impellers are of bronze designed to operate in hydraulic balance. Sealing rings are provided around impeller hubs to prevent leakage. The bearings are of the ring oiling type separated by stuffing boxes from contact with the water being pumped.

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BRANCHES:

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LYNCHBURG, VA.

Manufacturers of

FOR **WATER AND GAS**

SPECIAL CASTINGS

Flanged Pipe and Flanged Fittings
General Founders and Machinists

GLAMORGAN

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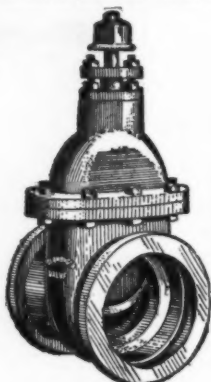


Glamorgan "Patented"
 Compression Hydrants
 Gate Hydrants

VALVES

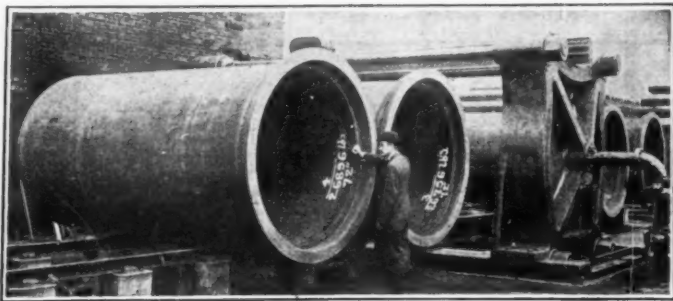
FOR

Water, Gas and Steam

**HYDRANTS.****VALVES.**

We solicit inquiries for Grey Iron Castings
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THE IMPORTANT TEST



72-inch Pipe at Hydraulic Test Press. Each Length of our Manufacture is Tested by Full Water Pressure before Shipment.

The earliest Cast Iron Pipe on record was laid in 1664—250 years ago—and is still in service. Substitutes for cast iron last from 5 to 25 years, and give unsatisfactory service even through this short period.

Which Will You Choose for Your Works?

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ALL REGULAR SIZES—2-INCH TO 84-INCH.



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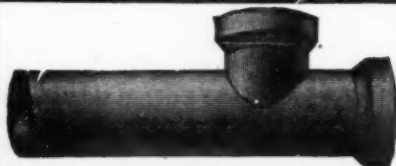
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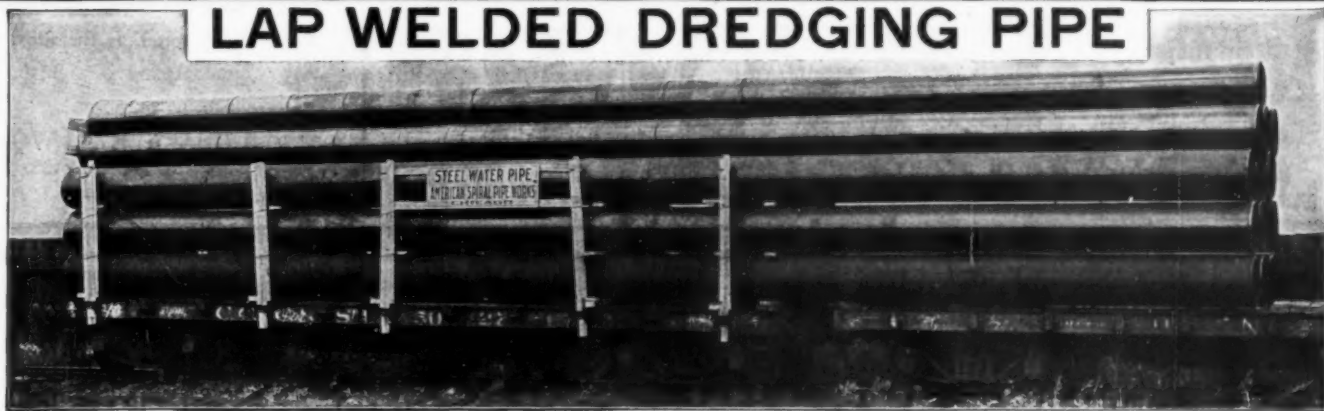


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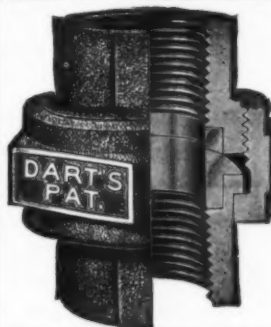
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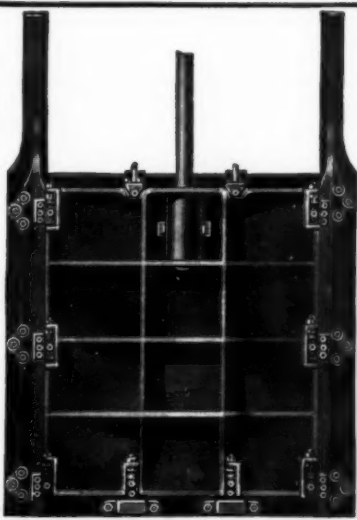
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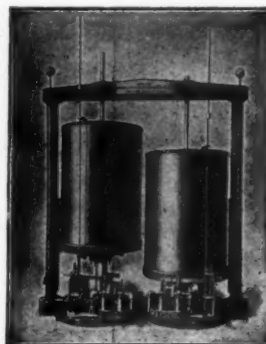
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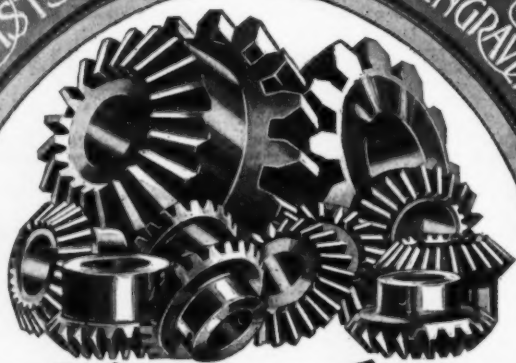
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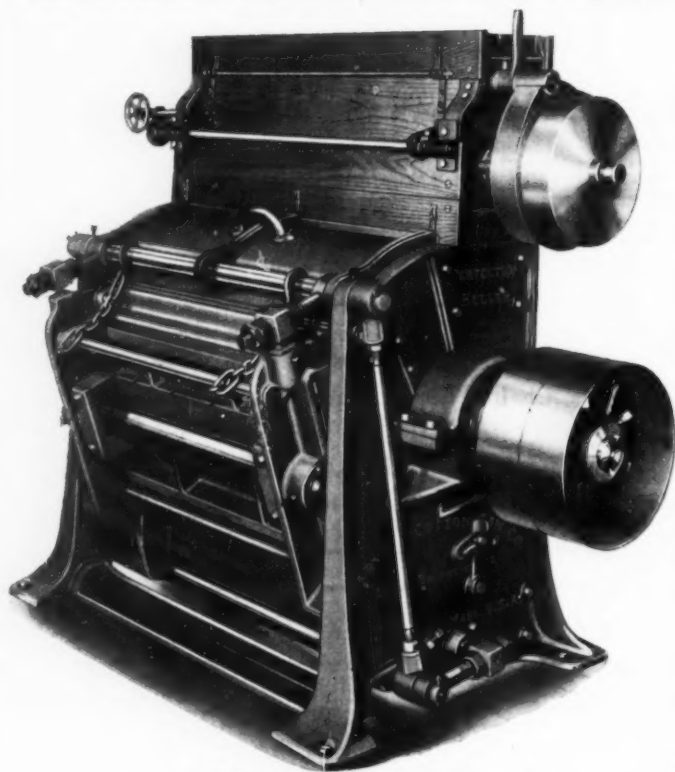
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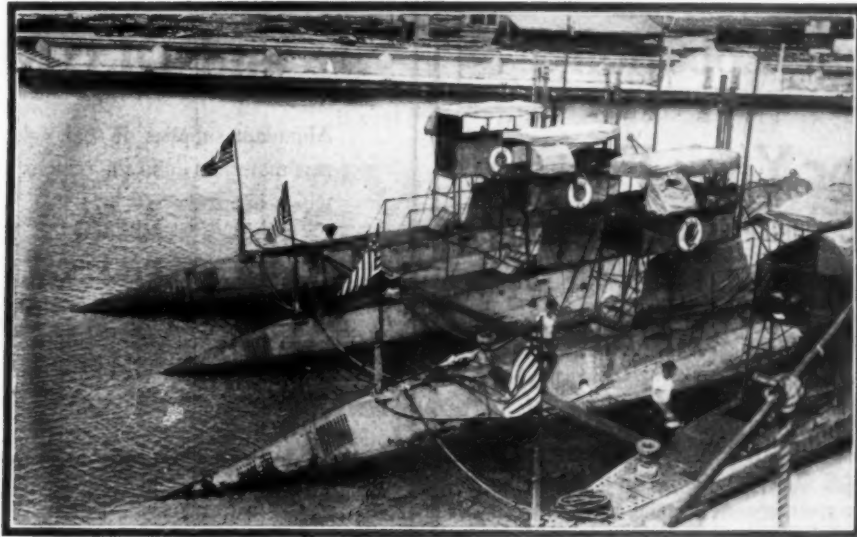
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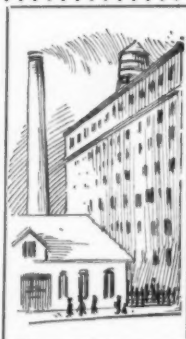
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For this reason their Industrial and Agricultural Department is maintained. Its co-operation is offered in every way possible to the homeseeker who will investigate the opportunities of the South; every assistance is extended which will enable him to find the location where are the home conditions he desires and which will give him prosperity. Immigration agents will advise with him. The information about lands, crops and the various sections and conditions along the roads, carefully collected by the companies, is at his command. Careful attention will be given to secure for him the special information desired on particular subjects or localities. Booklets and other printed matter will be sent on application.

After the homeseeker is located, trained and practical agricultural field agents, live stock, dairy and poultry agents familiar with local conditions will be at his service in solving any of the problems which his new location may bring. Market agents will help him to find the best market for his products.

What we do for the homeseeker, we also do for the manufacturer looking for a location for his plant. Industrial agents will help him solve the questions as to the proper point where raw materials may be satisfactorily assembled; where labor, power, transportation and market conditions are best; where necessary lands are properly located and to be had; where local capital, if wanted, will join in building the plant, and where all the other conditions which help to make the success of the industry and the welfare of its labor are to be found.

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How little the South knows about itself and how little the country knows about the South may be typified in the vague, indefinite knowledge of this section and of other sections, of the wonderful mountain regions which stretch from West Virginia to Northern Alabama.

Here and there are found spots, such as some of the summer resorts in the Virginia and Carolina mountains and a few places noted as winter as well as summer resorts which are known to the general public.

In "Our Southern Highlanders," by Horace Kephart, there are some striking facts regarding this wonderland of the South. "We are," says he, "wont to think of the South as a low country, with sultry climate; yet its mountain chains stretch uninterruptedly southwestward from Virginia to Alabama, 650 miles in an air line. They spread over parts of eight contiguous States and cover an area somewhat larger than England and Scotland, or about the same as that of the Alps. In short, the greatest mountain system of Eastern America is massed in the Southland. In its upper zone one sleeps under blankets the year round. * * *

"In all the region north of Virginia and east of the Black Hills of Dakota there is but one summit (Mt. Washington, in New Hampshire) that reaches 6000 feet above sea level, and there are only a dozen others that exceed 5000 feet. By contrast, south of the Potomac there are 46 peaks and 41 miles of dividing ridges that rise above 6000 feet, besides 288 mountains and some 300 miles of divide that stand more than 5000 feet above the sea. In North Carolina alone the mountains cover 6000 square miles, with an average elevation of 2700 feet and with 21 peaks that overtop Mt. Washington."

And then the writer asks himself, in view of these facts, why so little is known about this region. "The Alps and the Rockies, the Pyrennees and the Harz," said he, "are more familiar to the American people, in print and picture, if not by actual visit, than are the Black, the Balsam and the Great Smoky Mountains. It is true that summer tourists flock to Asheville and Toxaway, Linville and Highlands, passing their time at modern hotels and motoring along a few macadamized roads, but what do they see of the billowy wilderness that conceals most of the native homes? * * * We read more and talk more about the Filipinos, see more of the Chinese and the Syrians, than of these three million next-door Americans who are of colonial ancestry and mostly of British stock." * * *

Referring to the section of this mountain region known as the Unakas, attention is called to the fact that

"while the Blue Ridge has seven peaks that rise above 5000 feet, the Unakas have 125 summits exceeding 5000 feet and 10 that are over 6000 feet. Connecting the Unaka chain with the Blue Ridge are several transverse ranges, the Stone, Beech, Roan, Yellow, Black, Newfound, Pisgah, Balsam, Cowee, Nantahala, Tusquitee and a few minor mountains, which as a whole are much higher than the Blue Ridge, 156 summits rising over 5000 feet and 30 over 6000 feet above the sea level."

Referring to the beauty of this mountain region and to the age of these mountains, which justify the name Grandfather given to one of North Carolina's mountain peaks, Mr. Kephart says:

"The foreground of such a landscape, in summer, is warm, soft, dreamy, caressing, habitable; beyond it are gentle and luring solitudes; the remote ranges are inexpressibly lonesome, isolated and mysterious; but everywhere the green forest mantle bespeaks a vital present; nowhere does cold, bare granite stand as the sepulchre of an immemorial past.

"And yet these very mountains of Carolina are among the ancients of the earth. They were old, very old, before the Alps and the Andes, the Rockies and the Himalayas were molded into their primal shapes. Upon them, in after ages, were born the first hardwoods of America—perhaps those of Europe, too—and upon them today the last great hardwood forests of our country stand in primeval majesty, mutely awaiting their imminent doom.

"The richness of the Great Smoky forest has been the wonder and the admiration of everyone who has traversed it. As one climbs from the river to one of the main peaks he passes successively through the same floral zones he would encounter in traveling from mid-Georgia to Southern Canada.

"Starting amid sycamores, elms, gums, willows, persimmons, chinquapins, he soon enters a region of beech, birch, basswood, magnolia, cucumber, butternut, holly, sourwood, box elder, ash, maple, buckeye, poplar, hem-

lock and a great number of other growths along the creeks and branches. On the lower slopes are many species of oaks, with hickory, hemlock, pitch pine, locust, dogwood, chestnut. In this region nearly all trees attain their fullest development. On north fronts of hills the oaks reach a diameter of five to six feet. In cool, rich coves, chestnut trees grow from six to nine feet across the stump, and tulip poplars up to 10 or 11 feet, their straight trunks towering like gigantic columns, with scarcely a noticeable taper, 70 or 80 feet to the nearest limb.

"Ascending above the line of 3000 feet, white oak is replaced by the no less valuable 'mountain oak.' Beech, birch, buckeye and chestnut persist to 5000 feet. Then, where the beeches dwindle until adult trees are only knee-high, there begins a sub-arctic zone of black spruce, lalsam, striped maple, aspen and the 'Peruvian' or red cherry.

"I have named only a few of the prevailing growths. Nowhere else in the temperate zone is there such a variety of merchantable timber as in Western Carolina and the Tennessee front of the Unaka system. About 120 species of native trees grow in the Smoky Forest itself. When Asa Gray visited the North Carolina mountains he identified, in a 30-mile trip, a greater variety of indigenous trees than could be observed in crossing Europe from England to Turkey, or in a trip from Boston to the Rocky Mountain plateau. As John Muir has said, 'our forests, however slighted by man, must have been a great delight to God; for they were the best He ever planted.'

"The undergrowth is of almost tropical luxuriance and variety. Botanists say that this is the richest collecting ground in the United States. Whether one be seeking ferns or fungi or orchids, or almost anything else vegetal, each hour will bring him some new delight. In summer the upper mountains are one vast flower garden; the white and pink of rhododendron, the blaze of azalea, conspicuous above all else in settings of every imaginable shade of green."

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It should be borne in mind that in addition to the wonders with which nature has so liberally dowered this section in climate, in soil, in timber, in water-courses and in waterfalls, this vast region, surpassing in extent England and Scotland combined, is in the very heart of the country.

Toward the setting sun are the mighty prairie States, with their immense grain yields and their amazingly great industrial development. On this side are to be found Ohio, Indiana and Illinois and the far West, the mighty metallurgical interests of Cincinnati, Cleveland, Gary, Chicago and other industrial centers of the West.

The rising sun, as it bathes these mountain tops with its glory, passes over the orange and the grapefruit groves of Florida, on through the cotton belt and the almost limitless trucking fields of the coast, which now run far into the interior.

In this mountain region can be assembled not only the raw materials with which nature has endowed this section, but the fruits, the vegetables, the meats, the grains and the grasses of the South and the West that would find a common meeting-ground in these mountain sections.

This region ought to be developed as the great scenic and resort place of America.

It ought to be made more widely known, and far more attractive than the mountains of Colorado.

It ought to be advertised ten times more broadly than it has ever been advertised.

It ought to be crowded, winter and summer, with people from every part of the land, North and West, as well as South.

The possibilities for this section as a resort region are unsurpassed by any other section of any other country on earth. And yet the resort feature, as great as its potentialities are, is not so great as the possibilities of this region for the development of industrial interests, where climatic advantages would give the highest possible efficiency to workmen.

Nowhere else in all the land can there be found a region where the raw materials for manufacture and the foodstuffs for maintaining population can be so advantageously assembled in connection with a climate so invigorating, winter and summer, as that of this wonderland from West Virginia to North Alabama.

If these advantages can be continuously and unceasingly and broadly made known to the country, there will eventually come a development worthy of the matchless charms and limitless resources of this Heaven-blessed country.

[Extracts from article in Manufacturers Record.]

The Clinchfield Runs Through the Heart of this Region

Carolina, Clinchfield & Ohio Railway

R. F. BREWER, Industrial Agent

JOHNSON CITY, TENN.

\$1,000,000 for Dairy Products

Goes out of Florida every year. As Florida has all the advantages of climate and soil for a wide variety of field crops and pasture grasses

Here is the Place For Profitable Dairy Farming

Florida needs thousands of intelligent dairy farmers who will make the most of the unparalleled advantages that this State has to offer them.

Every year more than a million dollars is sent to other States to pay for needed dairy products, when it is a matter of common knowledge among Florida dairymen that conditions in this State are favorable not only to the production of all the milk and cream used, but with proper effort Florida can produce immense quantities for export.



A FLORIDA DAIRY HERD OF JERSEYS.

In the first place, the protein feeds necessary to feed dairy stock can be grown in Florida in great profusion and in great variety. Cowpea hay, analyzing sixteen per cent. protein, is equal pound for pound to the best bran. Velvet bean hay and beggarweed are also high in protein content. In carbohydrate feeds we have an abundance in Japanese cane, sweet potatoes, cassava and others. There are any number of other feed crops and pasture grasses in addition to corn silage that can be produced in quantities in nearly all parts of the State. No greater opportunity exists in Florida today than that which is open to the dairy farmer. The supply of dairy products is always far short of the demand, necessitating, as stated above, sending out of the State over one million dollars a year for such products.

A splendid home market, therefore, is awaiting those who will take advantage of Florida's opening for dairy farming.

"Live Stock Farming in Florida" is the title of an interesting illustrated booklet containing a fund of authentic data and information on this subject. We will gladly send it to those desiring to investigate this opportunity.

FLORIDA EAST COAST RAILWAY

(FLAGLER SYSTEM)

J. E. INGRAHAM, Vice-President

ST. AUGUSTINE, FLA.

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American Steel & Wire Co., Chicago, Ill.
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Broderick & Bascom Rope Co., St. Louis, Mo.
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- Concrete Chutes.**
O. H. & E. Mfg. Co., Inc., Milwaukee, Wis.
- Concrete Construction. (Reinforced.)**
Corrugated Bar Co., Buffalo, N. Y.
Cunningham Construction Co., Shreveport, La.
Elford, E., Columbus, O.
Foster & O'reighton Co., Nashville, Tenn.
Guarantee Construction Co., New York, N. Y.
Jeffrey Mfg. Co., Columbus, O.
Requarth Co., O. W., Charlotte, N. C.
Turner, O. A. F., Minneapolis, Minn.
- Concrete Curb Protector. (Steel.)**
Steel Protected Concrete Co., Philadelphia, Pa.
- Concrete Mixers. [See Mixers. (Concrete)]**
- Concrete Reinforcing Bars.**
Bourne-Fuller Co., The, Cleveland, O.
Carnegie Steel Co., Pittsburgh, Pa.
Corrugated Bar Co., Buffalo, N. Y.
Dietrich Brothers, Baltimore, Md.
Gulf States Steel Co., Birmingham, Ala.
Hoffman & Co., R. O., Baltimore, Md.
Jones & Laughlin Steel Co., Pittsburgh, Pa.
Lackawanna Steel Co., Lackawanna, N. Y.
Laclede Steel Co., St. Louis, Mo.
Pardee Works Co., Perth Amboy, N. J.
Republic Iron & Steel Co., Youngstown, O.
Sweet Steel Co., Williamsport, Pa.
- Concrete Reinforcing Wire and Wire Fabric**
American Steel & Wire Co., Chicago, Ill.
Roebling's Sons Co., John A., Trenton, N. J.
- Condensers.**
Alberger Pump & Condenser Co., New York, N. Y.
Allis-Chalmers Mfg. Co., Milwaukee, Wis.
Grescom-Morris Co., Philadelphia, Pa.
Westinghouse Electric & Mfg. Co., Pittsburgh, Pa.
York Mfg. Co., York, Pa.
- Conductor Pipes.**
Edwards Mfg. Co., Cincinnati, O.
- Conduits. (Electrical.)**
National Metal Molding Co., Pittsburgh, Pa.
- Conduits. (Interior.)**
National Metal Molding Co., Pittsburgh, Pa.
- Conduits. (Steel.)**
National Metal Molding Co., Pittsburgh, Pa.
- Conduit Fittings.**
National Metal Molding Co., Pittsburgh, Pa.

Contractors (Drainage)
Globe Dredging Co., Savannah, Ga.
Thompson & Moseley, Inc., Greensboro, N. C.

Contractors. (Dredging)
Globe Dredging Co., Savannah, Ga.
Contractors. (Hydro-Electric Developments.)
Requarth Co., O. W., Charlotte, N. C.

Contractors. (Reinforced Concrete.)
Hayward & Ashby, Rocky Mount, N. C.
Requarth Co., O. W., Charlotte, N. C.

Contractors. (Water Supply.)
Layne & Bowler Co., Houston, Tex.

Contractor's Machinery and Supplies. [See also Hoisting Machinery.]

American Clay Machinery Co., The, Bucyrus, Ohio.
Austin Mfg. Co., Chicago, Ill.
Bever Mach. Co., The John F., Ravenna, O.
Cord, Geo. B., Cincinnati, O.
Flory Mfg. Co., S., Bangor, Pa.
Marine Metal & Supply Co., New York, N. Y.
Milburn Co., Alex. N., Baltimore, Md.
Monaghan Mach. Co., Chicago, Ill.
National Hoisting Engine Co., Harrison, N. J.
Oliver Mfg. Co., Wm. J., Knoxville, Tenn.
Sherwood, E. O., New York, N. Y.
Sterling Machinery Co., New York, N. Y.
Thaw & Williams, Cincinnati, Ohio.

Conveying and Elevating Machinery.
Amburns Co., (Tramway Department), New York, N. Y.

Bartlett & Snow Co., O. O., Cleveland, O.
Caldwell & Son Co., H. W., Chicago, Ill.
Flory Mfg. Co., S., Bangor, Pa.
Gifford-Wood Co., Hudson, N. Y.
Guarantee Construction Co., New York, N. Y.
Hunt Co., C. W., Inc., West New Brighton, N. Y.
Jeffrey Mfg. Co., Columbus, O.
Lidgerwood Mfg. Co., New York, N. Y.
Link-Belt Co., Philadelphia, Pa.
Main Belting Co., Philadelphia, Pa.
Mathews Gravity Carrier Co., Ellwood City, Pa.
McLanahan-Stone Mach. Co., Hollidaysburg, Pa.
Weller Mfg. Co., Chicago, Ill.

Cooperage Stock and Box Shook Machinery.
Gerlach Co., Peter, Cleveland, O.

Cordage.
Broderick & Bascom Rope Co., St. Louis, Mo.
Columbian Rope Co., Auburn, N. Y.
Waterbury Co., New York, N. Y.

Core Drilling.
Ameling Prospecting Co., H. R., St. Louis, Mo.
Sprague & Henwood, Inc., Scranton, Pa.

Corn-Mill Machinery.
Raymond Bros. Impact Pulv. Co., Chicago, Ill.
Starr Co., B. F., Baltimore, Md.
Wolf Co., Chambersburg, Pa.

Cotton Oil and Products.
American Cotton Oil Co., New York, N. Y.

Cotton Yarn. (Commission Merchants.)
Paulson, Linkrum & Co., New York, N. Y.

Cotton-Gin Machinery.
Carver Cotton Gin Co., East Bridgewater, Mass.
Continental Gin Co., Birmingham, Ala.
Murray Co., The, Atlanta, Ga.

Cotton-Mill Machinery.
Crompton & Knowles Loom Works, Worcester, Mass.
Draper Co., Hopedale, Mass.
Mason Machine Works, Taunton, Mass.
Saco-Lowell Shop, Boston, Mass.
Whitinsville Spin'g Ring Co., Whitinsville, Mass.

Cotton-Mill Supplies.
American Supply Co., Providence, R. I.
Crompton & Knowles Loom Works, Worcester, Mass.
Whitinsville Spin'g Ring Co., Whitinsville, Mass.

Cottonseed-Oil Machinery.
Buckeye Iron & Brass Works, Dayton, O.
Burruss Engineering Co., Atlanta, Ga.
Cardwell Machine Co., Richmond, Va.
Carver Cotton Gin Co., East Bridgewater, Mass.
Continental Gin Co., Birmingham, Ala.
French Oil Mill Machinery Co., Piqua, O.
Murray Co., The, Atlanta, Ga.
Platt Iron Works Co., Dayton, Ohio.
Raymond Bros. Impact Pulv. Co., Chicago, Ill.

Couplings.
American Spiral Pipe Works, Chicago, Ill.
Golden's Foundry & Machine Co., Columbus, Ga.
Wood's Sons Co., T. B., Chambersburg, Pa.

Couplings. (Car.)
Weimer Chain & Iron Co., Lebanon, Pa.

Coverings. (Pipe, Boiler, etc.)
Johns-Manville Co., H. W., New York, N. Y.
Southern Asbestos Mfg. Co., Inc., Richmond, Va.

Cranes. (Locomotive.)
Ohio Locomotive Crane Co., Bucyrus, O.

Cranes. (Traveling, Hand, Power, Hydraulic.)
Case Crane & Engineering Co., Columbus, Ohio.
Spindel, J. G., Reading, Pa.

Crayons.
Georgia Talc Co., Asheville, N. C.
Lowell Crayon Co., Lowell, Mass.

Crosscutting Equipment.
Casey-Hedges Co., Chattanooga, Tenn.
Southern Well Co., Warren, Pa.
Walsh & Weller Boiler Co., Chattanooga, Tenn.

Crosscutting Works.
American Crosscut Works, New Orleans, La.
Internat'l Crosscut & Cons. Co., Galveston, Tex.
National Lumber & Crosscutting Co., Texarkana, Ark.
Southern Crosscutting Co., Ltd., Slidell, La.
Southern Paving Const. Co., Chattanooga, Tenn.
Southern Wood Preserving Co., Atlanta, Ga.

Crossarms and Pivots.
Western Electric Co., New York, N. Y.

Crossarm Machinery.
Chattanooga Mch. Co., Chattanooga, Tenn.

Crossarms. (Ore-croated.)
American Ore-croated Wks., New Orleans, La.
Internat'l Crosscut & Cons. Co., Galveston, Tex.
National Lumber & Crosscutting Co., Texarkana, Ark.
Southern Crosscutting Co., Ltd., Slidell, La.
Southern Paving Const. Co., Chattanooga, Tenn.
Southern Wood Preserving Co., Atlanta, Ga.

Crossings. [See Railroad Frogs and Switches.]

Crosscut Machine.
Standard Portable Saw Mill Co., New Orleans, La.

Crosscutters. (Ore-croated.)
American Ore-croated Wks., New Orleans, La.
Internat'l Crosscut & Cons. Co., Galveston, Tex.
National Lumber & Crosscutting Co., Texarkana, Ark.
Southern Crosscutting Co., Ltd., Slidell, La.
Southern Paving Const. Co., Chattanooga, Tenn.
Southern Wood Preserving Co., Atlanta, Ga.

Crosscutters. (Steel.)
Carnegie Steel Co., Pittsburgh, Pa.

Crushed Stone. (Road Concrete and Ballast.)

American Ballast Co., Knoxville, Tenn.
Atlantic Power & Properties Co., Atlanta, Ga.
Bald Mountain Quarry, Newson, N. C.
Chickamauga Quarry & Construction Co., Chattanooga, Tenn.
Kirkpatrick Sand & Cement Co., Birmingham, Ala.
Western Breaker Quarry Co., Columbia, S. C.

Crushers. (Corn and Cob.)

Greendler Pat. Crusher & Pulv. Co., St. Louis, Mo.
Jeffrey Mfg. Co., Columbus, O.
Raymond Bros. Impact Pulv. Co., Chicago, Ill.

Crushers. (Rock.)

Austin Mfg. Co., Chicago, Ill.
Buchanan Co., Inc., O. G., New York, N. Y.
Chalmers & Williams, Chicago Heights, Ill.
Power & Mining Machinery Co., Oudashy, Wis.
Raymond Bros. Impact Pulv. Co., Chicago, Ill.
Universal Road Mch. Co., Kingston, N. Y.
Western Wheel Scraper Co., Aurora, Ill.

Crushing and Pulverizing Machinery.

Allis-Chalmers Mfg. Co., Milwaukee, Wis.
Austin Mfg. Co., Chicago, Ill.
Bartlett & Snow Co., O. O., Cleveland, O.
Buchanan Co., Inc., O. G., New York, N. Y.
Chalmers & Williams, Chicago Heights, Ill.
Greendler Pat. Crusher & Pulv. Co., St. Louis, Mo.
Jeffrey Mfg. Co., Columbus, O.
K-B Pulverizer Co., Inc., New York, N. Y.
McLanahan-Stone Mach. Co., Hollidaysburg, Pa.
Raymond Bros. Impact Pulv. Co., Chicago, Ill.
Stedman's Foundry & Machine Works, Aurora, Ind.
Western Wheel Scraper Co., Aurora, Ill.

Culvert Pipe. (Cast Iron.)

American Cast Iron Pipe Co., Birmingham, Ala.
McLanahan-Stone Mach. Co., Hollidaysburg, Pa.
Craw & Sons, James B., Chicago, Ill.
Donaldson Iron Co., Emaus, Pa.
Glammorgan Pipe & Foundry Co., Lynchburg, Va.
Lynchburg Foundry Co., Lynchburg, Va.
Masillon Iron & Steel Co., Masillon, N. J.
U. S. Cast Iron Pipe & Fdy. Co., Burlington, N. J.
Wood & Co., R. D., Philadelphia, Pa.

Culverts. (Corrugated Metal.)

American Sheet & Tin Plate Co., Pittsburgh, Pa.
Armco Culvert Publicity Bureau, Cincinnati, O.
Atlas Metal Works, Dallas, Tex.
Canton Culvert and Silo Co., The, Canton, O.
Dixie Culvert & Metal Co., Atlanta, Ga.
Gallon Iron Works & Mfg. Co., The, Gallon, Ohio.
Lone Star Culvert Co., Houston, Tex.
National Corrugated Culvert Mfg. Co., Warren, Pa.
Newport Culvert Co., Inc., Newport, Ky.
Salisbury Metal Culvert Co., Salisbury, N. C.
Tennessee Metal Culvert Co., Nashville, Tenn.
Virginia Metal Culvert Co., Inc., Roanoke, Va.

Culverts. (Vitrified Pipe.)

Southern Sewer Pipe Co., Birmingham, Ala.
Stevens Sons Co., H., Macon, Ga.

Curb Protector. (Steel.)

Steel Protected Concrete Co., Philadelphia, Pa.

Cutter Grinders.

Vitrified Wheel Co., Westfield, Mass.

Cutting. (Oxy-Acetylene Process.)

Prest-O-Lite Co., Inc., The, Indianapolis, Ind.
The Searchlight Co., Chicago, Ill.

Cuts. (Half Tone, Line, Etc.)

Alpha Photo Engraving Co., Balto., Md.
Baltimore-Maryland Engraving Co., Baltimore, Md.

Derricks and Derrick Fittings.

Byers Mach. Co., The John F., Ravenna, O.
Hayward Co., The, New York, N. Y.
Monaghan Machine Co., Chicago, Ill.

Designers and Illustrators. (Printed Matter.)

Alpha Photo Engraving Co., Baltimore, Md.
Baltimore-Maryland Engraving Co., Baltimore, Md.

Diamond Core Drilling.

Ameling Prospecting Co., H. R., St. Louis, Mo.
Sprague & Henwood, Inc., Scranton, Pa.

Disposal Plants. (Garbage Incinerators.)

Stacy-Bates Co., Minneapolis, Minn.

Ditching Machinery.

American Spiral Dredge Co., Fort Wayne, Ind.
Bry City Dredge Works, Bay City, Mich.
Economy Excavator Co., Iowa Falls, Iowa.
Fairbanks Steam Shovel Co., Marion, O.
Hayward Co., The, New York, N. Y.
Marion Steam Shovel Co., Marion, O.
Monaghan Machine Co., Chicago, Ill.
The Automatic Shovel Co., Lorain, Ohio.
Williams Co., The, G. H., Erie, Pa.

Doors. (Steel Rolling.)

Kinnear Mfg. Co., Columbus, O.
Van Harlingen, J. M., Atlanta, Ga.

Doors. (Tin Clad.)

Victor Mfg. Co., Newburyport, Mass.

Double Seamers.

Ans Machine Co., Max, Bridgeport, Conn.

Draftsman.

Ohldey Co., Richmond, Va.

Draftsman's Supplies.

Weber & Co., F., Philadelphia, Pa.

Dredging Contractors. [See Contractors (Dredging).]

Dredge Chains.

Weimer Chain & Iron Co., Lebanon, Pa.

Dredges. [See Excavating Machinery.]

Drills. (Pneumatic.) [See also Drills Rock and Mining.]

Drills. (Prospecting.)

Keystone Steam Well Mach. Co., Beaver Falls, Pa.

Drills. (Rock and Mining.)

Jeffrey Mfg. Co., Columbus, O.
Sullivan Mch. Co., Chicago, Ill.

Drills. (Twist.)

McKenna Bros. Brass Co., Pittsburgh, Pa.
Morris Twist Drill & Mch. Co., New Bedford, Mass.

Drop Forgings.

American Spiral Pipe Works, Chicago, Ill.

Drop Forging Machinery.

Riles Co. E. W., Brooklyn, N. Y.
Erie Foundry Co., Erie, Pa.

Dryers. (Sand.) [See Sand Dryers.]

Dry Docks. (Builders of)

American Bridge Co., of New York, N. Y.

Drying Machinery.

American Process Co., New York, N. Y.
Bulley-Lobby Co., The, Charleston, S. C.
Buffalo Forge Co., Buffalo, N. Y.
Cottrellville, Boiler Works, Cottrellville, Pa.
Cummer & Son Co., J. D., The, Cleveland, Ohio
Hersey Manufacturing Co., South Boston, Mass.
Ruggles-Coles Engineering Co., New York, N. Y.
Starivani Co., B. F., Hyde Park, Boston, Mass.

Dry Kilns.

Buffalo Forge Co., Buffalo, N. Y.
Moore Dry Kiln Co., L., Jacksonville, Fla.

Dry Kiln Equipment.

Moore Dry Kiln Co., L., Jacksonville, Fla.

Dumbwaiters. (Hand Power.)

McKenna Bros. Brass Co., Pittsburgh, Pa.
Spindel, J. G., Reading, Pa.

Dump Wagons.

Acme Wagon Co., Emigville, Pa.
Henderson Wagon Wks. Co., Henderson, Ky.
Western Wheel Scraper Co., Aurora, Ill.

Dust-Collecting Systems.

Buffalo Forge Co., Buffalo, N. Y.
King Co., F. E., Norfolk, Va.
South Atlantic Blow Pipe & Sheet Metal Co., Savannah, Ga.

Dynamite. (Industrial and Agricultural.)

De Pont Powder Co., Wilmington, Del.
Aetna Explosives Co., Inc., New York, N. Y.

Dynamometers and Motors.

Assets Purchasing Co., Wheeling, W. Va.
General Electric Co., Schenectady, N. Y.
Pan Electric Mfg. Co., St. Louis, Mo.
Terry Steam Turbine Co., Hartford, Conn.
Triumph Electric Co., Cincinnati, O.
Western Electric Co., New York, N. Y.

Leaves. (Trough.)

Edwards Mfg. Co., Cincinnati, O.

Ejectors. (Sewage.)

Lunkenheimer Co., The, Cincinnati, O.
Pacific Flash Tank Co., New York, N. Y.

Electric Machinery. (Dynamoes, Generators, Motors, etc.)

Allis-Chalmers Manufacturing Co., Milwaukee, Wis.
Comstock Electric Co., High Point, N. C.
Crocker-Wheeler Co., Amper, N. J.
Fairbanks-Morse & Co., Atlanta, Ga.
General Electric Co., Schenectady, N. Y.
Moore & Co., Edgar M., Pittsburgh, Pa.
Pan Electric Mfg. Co., St. Louis, Mo.
Piedmont Electric Co., Asheville, N. C.
Schebler Inc., B., Philadelphia, Pa.
Schroeder Electric Co., Evansville, Ind.
Sturtevant Co., R. F., Hyde Park Boston, Mass.
Triumph Electric Co., Cincinnati, O.
Wilson Mch. Co., St. Louis, Mo.

Electrical Contractors, Instruments and Supplies.

Comstock Electric Co., High Point, N. C.
Crocker-Wheeler Co., Amper, N. J.
Economy Fuse & Mfg. Co., Chicago, Ill.
General Electric Co., Schenectady, N. Y.
Lery-Morton Co., Columbus, Ga.
Piedmont Electric Co., Asheville, N. C.
Walker Electrical & Plumbing Co., Rome, Ga.

Electric Light Plants. (Portable.)

Schroeder Electric Co., Evansville, Ind.

Electro-Magnet. [See Magnet Electro.]

Elevating, Conveying and Power Transmission Machinery. [See also Conveying and Elevating Machinery and Power Transmission Mch.]

Elevators

ELECTRIC.

American Electric Machine & Elevator Co., St. Louis, Mo.

American Elevator & Machine Co., Louisville, Ky.

Current Elevator Co., James H., Cincinnati, Ohio.

Grothe Mfg. Co., F., Evansville, Ind.

K. C. Elevator Mfg. Co., Kansas City, Mo.

Moffatt Machinery Mfg. Co., Charlotte, N. C.

Ohio Elevator & Machine Co., Columbus, Ohio.

Otis Elevator Co., New York, N. Y.

Spindel, J. G., Reading, Pa.

Warner Elevator Co., Baltimore, Md.

Westbrook Elevator Co., Danville, Va.

HAND AND BELT POWER.

American Electric Machine & Elevator Co., St. Louis, Mo.

American Elevator & Machine Co., Louisville, Ky.

Current Elevator Co., James H., Cincinnati, Ohio.

Grothe Mfg. Co., F., Evansville, Ind.

K. C. Elevator Mfg. Co., Kansas City, Mo.

Moffatt Machinery Mfg. Co., Charlotte, N. C.

Ohio Elevator & Machine Co., Columbus, Ohio.

Otis Elevator Co., New York, N. Y.

Spindel, J. G., Reading, Pa.

Warner Elevator Co., Baltimore, Md.

Westbrook Elevator Co., Danville, Va.

HYDRAULIC.

American Electric Machine & Elevator Co., St. Louis, Mo.

American Elevator & Machine Co., Louisville, Ky.

Current Elevator Co., James H., Cincinnati, Ohio.

Grothe Mfg. Co., F., Evansville, Ind.

K. C. Elevator Mfg. Co., Kansas City, Mo.

Moffatt Machinery Mfg. Co., Charlotte, N. C.

Ohio Elevator & Machine Co., Columbus, Ohio.

Otis Elevator Co., New York, N. Y.

Spindel, J. G., Reading, Pa.

Warner Elevator Co., Baltimore, Md.

Westbrook Elevator Co., Danville, Va.

STEAM HYDRAULIC.

Ridgway & Son Co., The, Cottrellville, Pa.

Elevators. (Automatic.)

Mathews Gravity Carrier Co., Ellwood City, Pa.

Elevators. (Coal and Ashes.)

Gifford-Wood Co., Hudson, N. Y.

Elevators. (Portable for Warehouses, etc.)

Economy Engineering Co., Chicago, Ill.

Elevator Bolts.

Upson Nut Co., The, Cleveland, O.

Elevator Buckets.

Caldwell & Son Co., H. W., Chicago, Ill.
Gifford-Wood Co., Hudson, N. Y.

Hendrick Mfg. Co., Carbondale, Pa.

Jeffrey Mfg. Co., Columbus, O.

Link-Belt Co., Philadelphia, Pa.

Elevator Enclosures and Cabs.

Bolles Iron & Wire Works, J. E., Detroit, Mich.

Dow Wire & Iron Works, Louisville, Ky.

Dufur & Co., Baltimore, Md.

Dufur, Baggett & Co., Baltimore, Md.

Jackson Iron & Bronze Works, Jackson, Tenn.

Meyers Mfg. Co., The Fred J., Hamilton, O.

Ohio Elevator & Machine Co., The, Columbus, O.

Otis Elevator Co., New York, N. Y.

Elevator Ropes. [See Wire Ropes.]

Elevator Safety Gates.

American Elec. Mch. & Elevator Co., St. Louis, Mo.

Richmond Safety Gate Co., Richmond, Ind.

Emery Wheels. [See Grinding Wheels.]

Engineers.

APPRAISAL.

Atlantic Engineering Co., Savannah, Ga.

Day & Zimmerman, Philadelphia, Pa.

Meade, Richard K., Baltimore, Md.

Weller, Francis R., Washington, D. C.

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McCrory & Co., J. B. Atlanta, Ga.
Rucker, B. Parks, Charlotte, N. C.

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Arnold Co., The, Chicago, Ill.
Graves Engineering Co., Inc., New York, N. Y.
Kelly, Thos. C., Cincinnati, Ohio.
Lewis, Fred H., Birmingham, Ala.
Lide, Martin J., Birmingham, Ala.
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Tucker & Laxton, Charlotte, N. C.

MINING

Brown & Clarkson, Washington, D. C.
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Jones, E. M., Chattanooga, Tenn.
Renshaw & Breece, Huntington, W. Va.

MUNICIPAL

Anderson & Christie, Charlotte, N. C.
Brown & Clarkson, Washington, D. C.
Crosby, Walter W., Baltimore, Md.
Dabney Engineering Co., Memphis, Tenn.
Elrod, Henry E., Dallas, Texas.
Graves Engineering Co., Inc., New York, N. Y.
Greiner & Whitman, Baltimore, Md.
Havely, H. B., Monroe, N. C.
Hayward & Ashby Rocky Mount, N. C.
Hogue Engineering Ass'n, Charleston, W. Va.
Knowles, Morris, Pittsburgh, Pa.
McCrory Bros. & Cheves, Inc., Charleston, S. C.
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PAVING AND ROAD

Anderson & Christie, Charlotte, N. C.
Atlantic Engineering Co., Savannah, Ga.
Crosby, Walter W., Baltimore, Md.
Elrod, Henry E., Dallas, Texas.
Havely, H. B., Monroe, N. C.
Institute of Industrial Research, Washington, D. C.
McCrory Bros. & Cheves, Inc., Charleston, S. C.
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Shand Engineering Co., Columbia, S. C.
White, Gilbert O., Charlotte, N. C.

PUBLIC SERVICE PROPERTIES

Day & Zimmerman, Philadelphia, Pa.
Ferre Co., The H. G., Memphis, Tenn.
Ford, Bacon & Davis, New York, N. Y.
Gilman, Harry L., Boston, Mass.
Graves Engineering Co., Inc., New York, N. Y.
Scotfield Engineering Co., Philadelphia, Pa.
Stone & Webster Eng. Corp., Boston, Mass.
Weller, Francis R., Washington, D. C.
White Companies, J. G., New York, N. Y.

REFRIGERATING

McDonald Eng. Co., Robert M., Kansas City, Mo.

REINFORCED CONCRETE. (Bridges, Buildings, etc.)

Cunningham Construction Co., Shreveport, La.
Elford, E., Columbus, O.
Foster & Creighton Co., Nashville, Tenn.
Guarantee Construction Co., New York, N. Y.
Hayward & Ashby Rocky Mount, N. C.
Interstate Const., Louisville, Ky.
Luten, Daniel H., Indianapolis, Ind.
Martin Co., A., Portsmouth, Ohio.
Requarth Co., C. W., Charlotte, N. C.
Savannah Eng. & Construction Co., Savannah, Ga.
Spiker, William O., Atlanta, Ga.
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RIVER AND HARBOR

Gilman, Harry L., Boston, Mass.

SEWERAGE AND WATER-WORKS

Anderson & Christie, Charlotte, N. C.
Brown & Clarkson, Washington, D. C.
Dabney Engineering Co., Memphis, Tenn.
Ford, Bacon & Davis, New York, N. Y.
Greiner & Whitman, Baltimore, Md.
Havely, H. B., Monroe, N. C.
Hill, Nicholas S., Jr., and S. F. Ferguson, New York, N. Y.
Knowles, Morris, Pittsburgh, Pa.
Miller, Hiram Allen, Boston, Mass.
Myers, E. W., Greensboro, F. C.
Paw, Arthur, Atlanta, Ga.
Quick, Alfred M., Baltimore, Md.
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Walker Engineering Corp., Tampa, Fla.
White Companies, J. G., New York, N. Y.
White Gilbert O., Charlotte, N. C.

STEEL WORK AND ROLLING MILLS

Smythe Co., The S. R., Pittsburgh, Pa.

STRUCTURAL STEEL

Foster & Creighton Co., Nashville, Tenn.
Shearer, C. E., Memphis, Tenn.
Spiker, Wm. C., Atlanta, Ga.
Renshaw & Breece, Huntington, W. Va.

Engines.

COMPRESSED AIR

ake Engine Co., Grand Haven, Mich.

GAS AND GASOLINE

Affiliated Manufacturers Co., Milwaukee, Wis.
Allie-Chalmers Manufacturing Co., Milwaukee, Wis.
Bruce-Macbeth Engine Co., Cleveland, O.
Cooper Co., C. & G., Mt. Vernon, Ohio.
De La Vergne Machine Co., New York, N. Y.
International Gas Engine Co., Cudahy, Wis.
Metc. A., New York, N. Y.
Portsmouth Engine Co., Portsmouth, O.
Van Duzen, Rova Co., The, Columbus, O.
Westinghouse Electric & Mfg. Co., Pittsburgh, Pa.

OIL

Bolinders Co., New York, N. Y.
Chicago Pneumatic Tool Co., Chicago, Ill.
De La Vergne Machine Co., New York, N. Y.
Fairbanks-Morse & Co., Atlanta, Ga.
International Gas Engine Co., Cudahy, Wis.
Metc. A., New York, N. Y.
Moore & Sons Corp., Samuel L., Elizabeth, N. J.
Power Mfg. Co., Lima, Ohio.
Snow Steam Pump Plant, The, New York, N. Y.

STEAM

Allie-Chalmers Manufacturing Co., Milwaukee, Wis.
Ball Engine Co., Erie, Pa.
Buffalo Forge Co., Buffalo, N. Y.
Cameron & Barkley Co., Charleston, S. C.
Chicago Wagon Wrecking Co., Chicago, Ill.
Cooper Co., C. & G., Mt. Vernon, O.
Dake Engine Co., Grand Haven, Mich.
Griffith & Wedge Co., The, Zanesville, O.
Houston, Stanwood & Gamble Co., Cincinnati, O.
Lefell & Co., James, Springfield, O.
Lombard Iron Works, Augusta, Ga.
Mecklenburg Iron Works, Charlotte, N. C.
Murray Iron Works Co., Burlington, N. J.
Schofield Iron Works, Macon, Ga.
Sturtevant Co., B. F., Hyde Park, Boston, Mass.
Vitter Mfg. Co., Milwaukee, Wis.
Westinghouse Electric & Mfg. Co., Pittsburgh, Pa.

Envelopes.

'oung & Seiden Co., Baltimore, Md.

Excavating Machinery

American Clay Machinery Co., The, Bucyrus, Ohio.
American Steel Dredge Co., Fort Wayne, Ind.
Bay City Dredge Works, Bay City, Mich.
Byers Mach. Co., The John F., Ravenna, O.
Economy Excavator Co., Iowa Falls, Iowa.
Fairbanks Steam Shovel Co., Marion, O.
Hayward Co., New York, N. Y.
Jeffrey Mfg. Co., Columbus, O.
Lidgerwood Mfg. Co., New York, N. Y.
Marion Steam Shovel Co., Marion, O.
Monaghan Machine Co., Chicago, Ill.
Morris Machine Works, Baldwinville, N. Y.
National Hoisting Engine Co., Harrison, N. J.
Thew Automatic Shovel Co., Lorain, Ohio.
Williams Co., The G. H., Erie, Pa.

Excavators. (Trench.)

Bay City Dredge Works, Bay City, Mich.
Economy Excavator Co., Iowa Falls, Iowa.
Fairbanks Steam Shovel Co., Marion, O.
Hayward Co., The, New York, N. Y.
Monaghan Machine Co., Chicago, Ill.

Excelsior Machinery

Kline, Lewis T., Alpena, Mich.

Exhaust Heads

American Spiral Pipe Works, Chicago, Ill.

Exhibits. (Machinery Builders' Equipment and Supplies.)

Builders' Exchange, Baltimore, Md.

Expansion Joints

Badger & Sons Co., E. B., Boston, Mass.

Expansion Joints. (Street and Road.)

Phillip Carey Co., The, Cincinnati, Ohio.

Expanded Metal. (See Lath.)

Explosives

Du Pont Powder Co., Wilmington, Del.
Aetna Explosives Co., Inc., New York, N. Y.

Factory Sites. (Town and Railroad.) [See Industrial, Agricultural and Commercial Opportunities.]

Fans. (Electric.)

General Electric Co., Schenectady, N. Y.

Fans. (Ventilating.) [See Blowers, Exhaust Fans.]

Fastener Driving Machine. (Corrugated Joint.)

Saranac Machine Co., Benton Harbor, Mich.

Feed-Water Heaters and Purifiers

American Water Softener Co., Philadelphia, Pa.
Blake & Knowles Steam Pump Works, East Cambridge, Mass.
Murray Iron Works Co., Burlington, N. J.
National Pipe Bending Co., New Haven, Conn.
Scaife & Sons Co., Wm. B., Pittsburgh, Pa.
Stewart Heater Co., Buffalo, N. Y.

Feed-Water Heater and Purifier and Oil Separator Combined

Blake & Knowles Steam Pump Works, East Cambridge, Mass.

Felt. (Building, Sheathing.)

Barrett Mfg. Co., Philadelphia, Pa.

Fencing. (Corrugated, Galvanized, Concrete.)

Amer. Sheet & Tin Plate Co., Pittsburgh, Pa.

Fencing. (Woven Wire Field.)

American Steel & Wire Co., Chicago, Ill.
Cyclone Fence Co., Waukegan, Ill.
Gulf States Steel Co., Birmingham, Ala.

Fencing, Entrance Gates. (Iron, Steel, Wire.)

American Steel & Wire Co., Chicago, Ill.
Bolles Iron & Wire Wks., J. E., Detroit, Mich.
Cincinnati Iron Fence Co., Cincinnati, Ohio.
Cyclone Fence Co., Waukegan, Ill.
Dow Wire & Iron Works, Louisville, Ky.
Dufur & Co., Baltimore, Md.
Eureka Supply Co., Chattanooga, Tenn.
New Jersey Wire Cloth Co., Trenton, N. J.
Ohio Elevator & Mach. Co., The, Columbus, O.

Fertilizer Machy. [See also Phosphate Mch.]

K-B Pulverizer Co., Inc., New York, N. Y.
Stedman's Foundry & Machine Works, Aurora, Ind.
Vaik & Murdoch Iron Works, Charleston, S. C.

Files

Nicholson File Co., Providence, R. I.

Filters. (Water for Domestic and Industrial Purposes.)

American Water Softener Co., Philadelphia, Pa.
International Filter Co., Chicago, Ill.
New York Con. Jewell Fil. Co., New York, N. Y.

Fire Clay. [See Brick, Fire.]

Fire Door Fixtures

Richmond Safety Gate Co., Richmond, Ind.
Victor Mfg. Co., Newburyport, Mass.

Fire Extinguishers

Badger & Sons Co., E. B., Boston, Mass.

Fire Escapes

Bolles Iron & Wire Works, J. E., Detroit, Mich.
Obesapeake Iron Works, Baltimore, Md.
Eureka Supply Co., Chattanooga, Tenn.
Jackson Iron & Bronze Works, Jackson, Tenn.

Fire Hose

Eureka Fire Hose Mfg. Co., New York, N. Y.

Fire Places. (Brick and Tile.)

Hood Brick Co., B. Mifflin, Atlanta, Ga.

Fireproof Building Construction. [See Concrete Construction.]

Fireproof Building Material

Bannon Pipe Co., P., Louisville, Ky.
Johns-Manville Co., H. W., New York, N. Y.

Fireproof Doors and Shutters

Kinnear Mfg. Co., Columbus, O.
Richmond Safety Gate Co., Richmond, Ind.
Victor Mfg. Co., Newburyport, Mass.
Wagner's Sons Co., J. F., Louisville, Ky.
Wilson Corp., J. G., New York, N. Y.

Fireproof Windows. [See Window Frames and Sashes (Fireproof).]

Fittings. (Wire Rope.)

Waterbury Co., New York, N. Y.

Fireproofing. (Brick and Tile.)

Hood Brick Co., B. Mifflin, Atlanta, Ga.

Flanges. (Iron and Steel.)

American Cast Iron Pipe Co., Birmingham, Ala.
American Pipe & Construction Co., Phila., Pa.
American Spiral Pipe Works, Chicago, Ill.
Bart Mfg. Co., E. M., Providence, R. I.
Glamorgan Pipe & Foundry Co., Lynchburg, Va.
U. S. Cast Iron Pipe & Fdry. Co., Burlington, N. J.
Wood & Co., R. D., Philadelphia, Pa.

Flooring. (Composition.)

Petro-Pulp Floor Co., Kansas City, Mo.

Flooring. (Orecoated Block.)

Republic Orecoating Co., Indianapolis, Ind.

Flooring. (Hardwood, Maple, Oak.)

Whiting, William S., Elizabethton, Tenn.

Flour and Grist Mill Machinery and Supplies

Galdwell & Sons Co., H. W., Chicago, Ill.
Salem Foundry & Machine Works, Salem, Va.
Starr Co., B. F., Baltimore, Md.
Wolf Co., Chambersburg, Pa.

Flue Lining

Owensboro Sewer Pipe Co., Owensboro, Ky.
Southern Sewer Pipe Co., Birmingham, Ala.

Forges

Buffalo Forge Co., Buffalo, N. Y.

Forgings

Weimer Chain & Iron Co., Lebanon, Pa.

Foundations. (Waterproof.)

Requarth Co., C. W., Charlotte, N. C.

Foundry Equipment and Supplies

Hill-Branner Fdry. Supply Co., Cincinnati, O.
Newport Sand Bank Co., Inc., Newport, Ky.

Foundry Facings. (Talc and Soapstone.)

Georgia Talc Co., Asheville, N. C.
Hill-Branner Fdry. Supply Co., Cincinnati, O.

Foundry and Machine Shops

Glamorgan Pipe & Foundry Co., Lynchburg, Va.
Goldens Foundry & Machine Wks., Columbus, Ga.
Grainer & Co., Inc., Louisville, Ky.
Lombard Iron Works, Augusta, Ga.
Tilus, E. K., Petersburg, Va.
Vaik & Murdoch Iron Works, Charleston, S. C.

Frogs. [See Railroad Frogs and Switches.]

Fuel Economizers

Green Fuel Economizer Co., Matineawan, N. Y.
Sturtevant Co., B. F., Hyde Park, Boston, Mass.

Fuel Oil

Gulf Refining Co., Pittsburgh, Pa.
Texas Co., The, Houston, Tex.
U. S. Asphalt Refining Co., New York, N. Y.

Furnaces. (For Industrial Purposes.)

Smythe Co., The S. R., Pittsburgh, Pa.

Furniture. (Metal.)

The Van Dorn Iron Works Co., Cleveland, Ohio.

Fuses. (Electrical.)

Daum Co., A. F., Pittsburgh, Pa.
Economy Fuse & Mfg. Co., Chicago, Ill.

Fuse Shells. (Renewable)

Daum Co., A. F., Pittsburgh, Pa.
Economy Fuse & Mfg. Co., Chicago, Ill.

Fuses, Bases and Fittings

Johns-Manville Co., H. W., New York, N. Y.

Galvanized Steel and Iron

American Sheet & Tin Plate Co., Pittsburgh, Pa.
La Belle Iron Works, Steubenville, O.
McCalla Co., Harold, Philadelphia, Pa.
Whitaker-Gleason Co., Portsmouth Plant, Portsmouth, Ohio.

Galvanizing Machinery. (Sheet.)

Erie Foundry Co., Erie, Pa.

Garage and House. (Portable.)

Dixie Culvert & Metal Co., Atlanta, Ga.
Steel Products Co., The, Savannah, Ga.

Garbage Disposal Plants

Stacy-Bates Co., Minneapolis, Minn.

Gas Blowers. (Turbine.)

Terry Steam Turbine Co., Hartford, Conn.

Gas Engines. [See Engines, Gas.]

Gas Machines

Kemp Mfg. Co., O. M., Baltimore, Md.
Milburn Co., Alex. N., Baltimore, Md.

Gas Plants

Gas Engineering Co., Trenton, N. J.
Power & Mining Mach. Co., Cudahy, Wis.
Western Gas Construction Co., Ft. Wayne, Ind.

Gas Producers

Smythe Co., The S. R., Pittsburgh, Pa.
Westinghouse Electric & Mfg. Co., Pittsburgh, Pa.
Wood & Co., R. D., Philadelphia, Pa.

Gasoline and Kerosene

Gulf Refining Co., Pittsburgh, Pa.
Texas Co., The, Houston, Tex.

Gas and Steam Fitters' Tools

Saunders' Sons, D., Yonkers, N. Y.

Gears

Caldwell & Son Co., H. W., Chicago, Ill.
Oresson-Morris Co., Philadelphia, Pa.
James Mfg. Co., D. O., Chicago, Ill.
Jeffrey Mfg. Co., Columbus, O.

Generating Sets

Sturtevant Co., B. F., Hyde Park, Boston, Mass.
Triumph Electric Co., Cincinnati, O.

Geologists

Davis, Geo. C., Phila., Pa.
Froehling & Robertson, Richmond, Va.
Grimsley, G. P., Martinsburg, W. Va.

Glass. (Plate, etc.)

Binswanger & Co., Memphis, Tenn.

Governors. (Steam Engines.)

Pickering Governor Co., Portland, Conn.

Grain Elevator Supplies

Caldwell & Son Co., H. W., Chicago, Ill.
Jeffrey Mfg. Co., Columbus, O.
Link-Belt Co., Philadelphia, Pa.

Granite

Southern Marble & Granite Co., Spartanburg, S. C.

Grates and Grate Bars

Huber Grate Bar & Stoking Co., Baltimore, Md.
Thomas Grate Bar Co., Birmingham, Ala.

Gravel

Arnold Sand & Gravel Co., Baltimore, Md.
Davison Chemical Co., Baltimore, Md.

Gravel. (Roofing and Road)

American Ballast Co., Knoxville, Tenn.

Gravity Spiral Chutes

Mathews Gravity Carrier Co., Ellwood City, Pa.

Greases

Albany Lubricating Co., New York, N. Y.

Grease Cups

Albany Lubricating Co., New York, N. Y.
Lunkenheimer Co., The, Cincinnati, O.

Greases and Lubricating Compounds

Albany Lubricating Co., New York, N. Y.
Galena Signal Oil Co., Franklin, Pa.
Robinson & Son Co., Wm. C., Baltimore, Md.
Texas Co., The, Houston, Tex.

Grinders. (Gypsum, Limestone, etc.)

Stedman's Foundry & Machine Wks., Aurora, Ind.

Grinding Wheels

Carborundum Co., Niagara Falls, N. Y.
Vitrified Wheel Co., Westfield, Mass.

Groovers

Ruther Bros. Saw Mfg. Co., Inc., Rochester, N. Y.

Gunpowder

Du Pont Powder Co., Wilmington, Del.
Aetna Explosive Co., Inc., New York, N. Y.

Hammers. (Steam.)

Erie Foundry Co., Erie, Pa.

Handle Machinery. [See Woodworking Mch.]

Hangers. [See Palleys, Shifting and Hangers.]

Hay Tools

Myers & Bro., F. E., Ashland, Ohio.

Heater. (Asphalt.)

Ommer & Son Co., F. D., The, Cleveland, Ohio.

Heating Apparatus, Engineers and Contractors

Allen-Scales Engineering Co., Inc., Nashville, Tenn.
American Blower Co., Detroit, Mich.
Buffalo Steam Pump Co., Buffalo, N. Y.
Kelly, Thos. C., Cincinnati, Ohio.
Ruggles-Coles Engineering Co., New York, N. Y.
Sturtevant, B. F., Hyde Park, Boston, Mass.
Walker Electric & Plumbing Co., Rome, Ga.

Hoisting Machinery

Byers Machine Co., The John F., Ravenna, Ohio
Dake Engine Co., Grand Haven, Mich.
Flory Mfg. Co., S., Bangor, Pa.
Lidgerwood Mfg. Co., New York, N. Y.
Link-Belt Co., Philadelphia, Pa.
Mead-Morrison Mfg. Co., East Boston, Mass.
Monaghan Machine Co., Chicago, Ill.
Stronberg Engine Works, Stronberg, Pa.

Holes

CHAIN

Speidel, J. G., Reading, Pa.

ELECTRIC

Lidgerwood Mfg. Co., New York, N. Y.
Mead-Morrison Mfg. Co., East Boston, Mass.
Monaghan Mfg. Co., Chicago, Ill.
National Hoisting Engine Co., Harrison, N. J.
Ohio Elevator Co., New York, N. Y.
Patton Mfg

RAILROADS

Atlanta and West Point R. R., Atlanta, Ga.
 Carolina, Clinchfield & O. Ry., Johnson City, Tenn.
 Central of Georgia Ry., Savannah, Ga.
 Florida East Coast Ry., St. Augustine, Fla.
 Illinois Central Railroad Co., Chicago, Ill.
 Norfolk and Western Railway, Roanoke, Va.
 Seaboard Air Line, Norfolk, Va.
 Southern Railway System, Washington, D. C.

Industrial Track Work. [See Railways, Ind.]

Injectors.

Jenkins Bros., New York, N. Y.
 Lunkenheimer Co., The, Cincinnati, O.
 Randle Machinery Co., Cincinnati, O.
 Sellers & Co., Inc., Wm., Philadelphia, Pa.

Insulating Materials.

General Electric Co., Schenectady, N. Y.
 Johns-Manville Co., H. W., New York, N. Y.

Insurance.

Hartford Steam Boiler Inspector & Insurance Co., Hartford, Conn.

Investment Securities.

Leach & Co., A. B., New York, N. Y.
 New First National Bank, Columbus, O.
 Powell, Garard & Co., Chicago, Ill.
 Provident Savings Bank & Trust Co., Cincinnati, Ohio.

Iron.

Allegheny Steel Co., Pittsburgh, Pa.
 La Belle Iron Works, Steubenville, O.
 Republic Iron & Steel Co., Youngstown, O.
 Tennessee Coal, Iron & R. R. Co., Birmingham, Ala.
 Union Drawn Steel Co., Beaver Falls, Pa.
 Wood Iron & Steel Co., Alan, Philadelphia, Pa.

Irrigation Machinery.

Cameron Steam Pump Wks., A. S., New York, N. Y.

Joist Hangers.

The Van Dorn Iron Works Co., Cleveland, Ohio

Kettles. (Steam Jacket.)

Badger & Sons Co., E. R., Boston, Mass.

Lace Leather.

Graton & Knight Mfg. Co., Worcester, Mass.

Lamps. (Arc and Incandescent.)

Boston-Economy Lamp Division, National Lamp Works of General Electric Co., Danvers, Mass.
 General Electric Co., Schenectady, N. Y.
 Piedmont Electric Co., Asheville, N. O.

Lamps. (Carbon and Tungsten.)

Newman Electric Lamp Co., Cincinnati, O.

Lamp Posts. (Electric, Gas.)

Western Gas Construction Co., Ft. Wayne, Ind.

Lands. (Mineral, Timber, Farm, etc.) [See Industrial, Agricultural and Commercial Opportunities.]

Landscape Architects [See Engineers.] [Landscape]

Lathes. (Eng. de.)

Greaves, Kinsman Tool Co., The, Cincinnati, O.

Lawn Furniture. (Wire.)

Bolles Iron & Wire Works, J. E., Detroit, Mich.
 Cincinnati Iron Fence Co., Cincinnati, Ohio.
 Dufur & Co., Baltimore, Md.
 Dufur, Baggett & Co., Baltimore, Md.

Lights. (Portable Acetylene.)

Milburn Co., Alex. N., Baltimore, Md.

Liquor Filters.

International Filter Co., Chicago, Ill.

Lithographers, Engravers.

Young & Selden Co., Baltimore, Md.

Lockers (Steel)

Keighly Metal Ceiling Mfg. Co., S., Pittsburgh, Pa.
 Van Harlingen, J. M., Atlanta, Ga.

Locomotives.

INDUSTRIAL.
 Baldwin Locomotive Wks., The, Philadelphia, Pa.
 Olmex Mfg. Co., Oorpy, Pa.
 Gard, Geo. B., Cincinnati, O.
 Davenport Locomotive Works, Davenport, Ia.
 Erie Co., J. D., Plymouth, Ohio.
 Jeffrey Mfg. Co., Columbus, O.
 Lima Locomotive Corporation, Lima, O.
 Porter Co., H. K., Pittsburgh, Pa.
 Southern Iron & Equipment Co., Atlanta, Ga.
 Thaw & Williams, Cincinnati, O.

RAILWAY.

Baldwin Locomotive Wks., The, Philadelphia, Pa.
 Lima Locomotive Corporation, Lima, O.
 Porter Co., H. K., Pittsburgh, Pa.

Looms and Weaving Machinery.

Crompton & Knowles Loom Works, Worcester, Mass.
 Upraper Co., Hopedale, Mass.
 Mason Machine Works, Taunton, Mass.
 Saco-Lowell Shops, Boston, Mass.

Loom Harness.

American Supply Co., Providence, R. I.

Lubricants.

Albany Lubricating Co., New York, N. Y.
 Oils Elevator Co., New York, N. Y.

Lubricants. (Graphite.)

Dixon Crucible Co., Joseph, Jersey City, N. J.

Lumber. (Ash, Elm, Gum, Oak)

Lamb-Fish Lumber Co., Charleston, Miss.

Lumber. (Yellow Pine.)

Industrial Lumber Co., Elizabeth, La.

Lumber. (Oreosote.)

American Oreosote Works, New Orleans, La.
 National Lumber & Oreosoting Co., Texarkana, Ark.

Lumber. (Heavy Construction, Pitch Pine, etc.)

Industrial Lumber Co., Elizabeth, La.

National Lumber & Oreosoting Co., Texarkana, Ark.

Lumber Buggies.

Soule Steam Feed Works, Meridian, Miss.

Lumber Stackers.

Soule Steam Feed Works, Meridian, Miss.

Machinery. (Special.)

Ries Co., E. W., Brooklyn, N. Y.

Chattanooga Mch. Co., Chattanooga, Tenn.

Kline, Lewis L., Algona, Iowa.

Universal Machine Co., Baltimore, Md.

Machinery and Supplies. (New and Second-Hand Bargains.)

Assets Purchasing Co., Wheeling, W. Va.
 Birtwell, W. L., Phila., Pa.
 Boston Iron & Metal Co., Balto., Md.
 Central Transfer Co., Baltimore, Md.
 Chicago House Wrecking Co., Chicago, Ill.
 Cleveland Belting & Machinery Co., Cleveland, O.
 Detrick & Harvey Mch. Co., Baltimore, Md.
 Duxette & Son, New York, N. Y.
 Eagle Pipe Supply Co., Inc., New York, N. Y.
 Empire Mch. & Supply Corp., Norfolk, Va.
 Lehman, Charles T., Birmingham, Ala.
 Lodge & Shipley Mch. Tool Co., Cincinnati, O.
 Marine Metal & Supply Co., New York, N. Y.
 Moore & Son, Edgar M., Pittsburgh, Pa.
 National Mch. & Wrecking Co., Cleveland, Ohio.
 New River Co., Macdonald, W. Va.
 New York Machinery Exchange, New York, N. Y.
 Nussbaum & Co., V. M., Fort Wayne, Ind.
 Pfannmuller Engineering Co., Chicago, Ill.
 Power Equipment Co., New York, N. Y.
 Prentiss Tool & Supply Co., New York, N. Y.
 Randle Machinery Co., Cincinnati, O.
 Read Co., Howard W., Philadelphia, Pa.
 Samuel, Frank, Philadelphia, Pa.
 Serfert's Sons, Inc., L. E., Philadelphia, Pa.
 Tampa Machinery Exchange, Tampa, Fla.
 Thaw & Williams, Cincinnati, O.
 Toomey, Frank, Inc., Philadelphia, Pa.
 Wilson Mch. Co., St. Louis, Mo.
 Winterer, Herman L., Philadelphia, Pa.

Machine Tools.

Greaves, Kinsman Tool Co., The, Cincinnati, O.

Machinists. (Engineers.)

Universal Machine Co., Baltimore, Md.

Magnesia Materials.

Johns-Manville Co., H. W., New York, N. Y.

Magnetic Separators.

Buchanan & Co., Inc. O. G., New York, N. Y.

Mail Chutes.

Outler Mail Chute Co., Rochester, N. Y.

Mechanical Draft.

Buffalo Forge Co., Buffalo, N. Y.

Sturtevant Co., B. F., Hyde Park, Boston, Mass.

Metal Ceilings. [See Ceilings, Metal.]

Metalline.

Metalline Co., Long Island City, N. Y.

Metal. (For Tanks, Culverts, Roofing, etc.)

Whitaker-Giesner Co., Portsmouth Plant, Portsmouth, Ohio.

Metal Culverts. [See Culverts.] (Corrugated Metal.)

Metal Shingles. [See Shingles.] (Metal.)

Metal Window Frames and Sash. [See Window Frames and Sash.] (Fireproof.)

Metal Work. [See Sheet Metal Work.]

Metal-Working Machinery. (Sheet.)

Bliss Co., E. W., Brooklyn, N. Y.

Meters. (Water.)

Alberger Pump & Condenser Co., New York, N. Y.

Meter Boxes, Couplings, Gauges. (Water.)

Clark Co., H. W., Mattoon, Ill.

Micrometers, Calipers, etc.

Starrett Co., L. S., Athol, Mass.

Milk Filters. (Liquor, Milk, etc.)

International Filter Co., Chicago, Ill.

Mill Engineers and Architects.

O'Brian, W. O., Memphis, Tenn.

Sirrine, J. E., Greenville, S. O.

Mill Machinery and Supplies.

Bailey-Lebby Co., Charleston, S. C.
 Cameron & Barkley Co., Charleston, S. C.
 Empire Mch. & Supply Corp., Norfolk, Va.
 Gainesville Iron Works, Gainesville, Ga.
 Lombard Iron Works, Augusta, Ga.
 Lunkenheimer Co., The, Cincinnati, O.
 Mecklenburg Iron Works, Charlotte, N. C.
 Salsen Foundry & Machine Wks., Salem, Va.
 Starr Co., B. F., Baltimore, Md.
 Wolf Co., Chambersburg, Pa.

Mining Machinery. (Gold, Copper, Plate, etc.)

Bartlett & Snow Co., O. O., Cleveland, O.
 Jeffrey Mfg. Co., Columbus, O.
 McLannahan-Stone Mach. Co., Hollidaysburg, Pa.
 Mecklenburg Iron Works, Charlotte, N. C.
 Raymond Bros. Impact Pulv. Co., Chicago, Ill.

Mixers. (Concrete.)

Milwaukee Concrete Mixer Co., Milwaukee, Wis.

Van Dusen, Royce Co., The, Columbus, O.

Mixing Machinery.

Dunning, W. D., Syracuse, N. Y.

Mortar Colors.

Chattanooga Paint Co., Chattanooga, Tenn.

Motor Trucks. (Gasoline.)

White Co., The, Cleveland, O.

Motor Trucks. (Second Hand.)

Mar-Del Mobile Co., Baltimore, Md.

Music Wire.

American Steel & Wire Co., Chicago, Ill.

Waterbury Co., The, New York, N. Y.

Nails. (Cut.)

La Belle Iron Works, Steubenville, O.

Nails and Spikes.

La Belle Iron Works, Steubenville, Ohio.

Republic Iron & Steel Co., Youngstown, O.

Youngstown Sheet & Tube Co., Youngstown, O.

Nuts. [See Bolts, Nuts, Rivets, etc.]

Oil. (Oreosote.)

Barrett Mfg. Co., Philadelphia, Pa.

Oils. (Lubricating, Etc.)

Albany Lubricating Co., New York, N. Y.

Galea Signal Oil Co., Franklin, Pa.

Gulf Refining Co., Pittsburgh, Pa.

Robinson & Son Co., Wm. G., Baltimore, Md.

Texas Co., The, Houston, Tex.

Oil Cans.

Wall Mfg. Supply Co., P., Allegheny, Pa.

Oil Engines. [See Engines (Oil).]

Oil Separators.

Hewlett Heater Co., Buffalo, N. Y.

Oil Well Machinery.

Keystone Steam Well Mach. Co., Beaver Falls, Pa.
 Williams Bros., Ithaca, N. Y.

Ore Handling Machinery. [See Coal Handling Machinery.]

Ornamental Iron Works.

Bolles Iron & Wire Wks., J. E., Detroit, Mich.
 Chesapeake Iron Works, Baltimore, Md.
 Dow Wire & Iron Works, Louisville, Ky.
 Jackson Iron & Bronze Works, Jackson, Tenn.
 Ohio Elevator & Mch. Co., The, Columbus, O.
 Schrieber & Sons Co., The, Cincinnati, O.
 Read Architectural Iron Works, Louisville, Ky.
 The Van Dorn Iron Works Co., Cleveland, Ohio.

Oxygen.

International Oxygen Co., New York, N. Y.

Oxygen Generators.

International Oxygen Co., New York, N. Y.

Oxy-Acetylene Welding and Cutting Outfit and Supplies.

International Oxygen Co., New York, N. Y.
 Milburn Co., Alex. N., Baltimore, Md.
 Searchlight Co., Chicago, Ill.

Packing. (Asbestos, Metallic, Rubber, Leather, etc.)

Goodrich Co., B. F., Akron, O.
 Goodyear Tire & Rubber Co., Akron, O.
 Graton & Knight Mfg. Co., Worcester, Mass.
 Jenkins Bros., New York, N. Y.
 Johns-Manville Co., H. W., New York, N. Y.
 Power Specialty Co., New York, N. Y.

Paint. (Metal Surfaces.)

Dixon Crucible Co., Joseph, Jersey City, N. J.

Paint. (Preservative.)

Reeves Co., The, New Orleans, La.

Paint. (Roofing, Building, etc.)

Cameron & Barkley Co., Charleston, S. C.
 Chattanooga Paint Co., Chattanooga, Tenn.

Paper. (Roofing, Building, Sheeting, etc.)

Barrett Mfg. Co., Philadelphia, Pa.

Cameron & Barkley Co., Charleston, S. C.

Partitions. (Wooden Rolling.)

Van Harlingen, J. M., Atlanta, Ga.

Patent Attorneys.

Brown, Eugene O., Washington, D. C.
 Chandlee & Chandlee, Washington, D. C.
 Coleman, Watson E., Washington, D. C.
 Evans & Co., Victor J., Washington, D. C.
 Hodges, Vernon E., Washington, D. C.
 Jenner, Herbert, Washington, D. C.
 Lacey, R. S. & A. E., Washington, D. C.
 McLandie, A. S., Chattanooga, Tenn.
 Mills, Mansell F., Washington, D. C.
 Moore, Edw. Bruce, Washington, D. C.
 Parker, C. L., Washington, D. C.
 Pattison & Co., P. H., Washington, D. C.
 Woodworth John E., Washington, D. C.

Pavement Filler.

Barrett Mfg. Co., Philadelphia, Pa.

Paving Block Machinery.

Chattanooga Mch. Co., Chattanooga, Tenn.

Paving Blocks. (Oreosoted.)

International Oreosoting & Construction Co., Galveston, Tex.
 National Lumber & Oreosoting Co., Texarkana, Ark.
 Republic Oreosoting Co., Indianapolis, Ind.
 Southern Oreosoting Co., Ltd., Rildell, La.
 Southern Paving Const. Co., Chattanooga, Tenn.
 Southern Wood Preserving Co., Atlanta, Ga.
 Wyckoff Pipe & Oreosoting Co., Inc., The, New York, N. Y.

Paving Blocks. (Granite.)

Southern Marble & Granite Co., The, Spartanburg, S. C.

Paving Brick.

Garlyle Paving Brick Co., Portsmouth, O.
 Copeland-Ingles Shale Brick Co., Birmingham, Ala.
 Dunn Wire-Cut-Log Brick Co., Cosant, Ohio
 Southern Clay Mfg. Co., Chattanooga, Tenn.
 Standard Brick Co., Marion, Ga.
 Westport Paving Brick Co., Baltimore, Md.

Paving Plants. (Asphalt.)

Baier Asphalt Paving Co., Philadelphia, Pa.
 Cummer & Son Co., F. D., Cleveland, Ohio
 Equitable Asphalt Maintenance Co., Kansas City, Mo.

Perforated Metal.

Caldwell & Son, H. W., Chicago, Ill.
 Erdie Perforating Co., Rochester, N. Y.
 Hendricks Mfg. Co., The, Carbondale, Pa.
 Manhattan Perforated Metal Co., New York, N. Y.
 Mundi & Sons, Charles, Jersey City, N. J.

Petroleum Refiners.

Gulf Refining Co., Pittsburgh, Pa.

Standard Oil Co., Inc., Newark, N. J.

Texas Co., The, Houston, Tex.

Phosphate Machinery.

American Process Co., New York, N. Y.
 Bailey-Lebby Co., The, Charleston, S. C.
 Cameron & Barkley Co., Charleston, S. C.
 K-B Pulverizer Co., New York, N. Y.
 Link-Belt Co., Philadelphia, Pa.
 McLannahan-Stone Mach. Co., Hollidaysburg, Pa.
 Raymond Impact Pulv. Co., Chicago, Ill.
 Valk & Murdoch Iron Works, Charleston, S. C.

Pig Iron.

La Belle Iron Works, Steubenville, O.
 Republic Iron & Steel Co., Youngstown, O.
 Tennessee Coal, Iron & R. R. Co., Birmingham, Ala.

Pile Drivers.

Volcan Iron Works, Chicago, Ill.

Pile Driving and Wharf Building.

Murray & Co., Inc., W. D., Norfolk, Va.

Piling. (Oreosoted.)

American Oreosoting Works, New Orleans, La.
 Intern'l Oreosoting & Const. Co., Galveston, Tex.
 Southern Oreosoting Co., Ltd., Rildell, La.
 Southern Paving Const. Co., Chattanooga, Tenn.

Pillow Blocks.

Golden's Foundry & Machine Co., Columbus, Ga.

Medart Patent Pulley Co., St. Louis, Mo.

Pipe.

Allegheny Steel Co., Pittsburgh, Pa.
 La Belle Iron Works, Steubenville, Ohio.
 National Tube Co., Pittsburgh, Pa.
 Youngstown Sheet & Tube Co., Youngstown, O.

Pipe. (Cast Iron.)

American Cast Iron Pipe Co., Birmingham, Ala.
 American Pipe & Construction Co., Phila., Pa.
 Clow & Sons, James B., Chicago, Ill.
 Donaldson Iron Co., Kansas, Pa.
 Giamorini Pipe & Foundry Co., Lynchburg, Va.
 Lynchburg Foundry Co., Lynchburg, Va.
 Muesillon Iron & Steel Co., Muesillon, O.
 U. S. Cast Iron Pipe & Fdry. Co., Burlington, N. J.
 Wood & Co., R. D., Philadelphia, Pa.

Pipe. (Coil.)

Frick Co., The, Waynesboro, Pa.
 National Pipe Bending Co., New Haven, Conn.
 York Mfg. Co., York, Pa.

Pipe. (Corrugated Culvert.) [See Culvert (Corrugated Metal).]

Pipe. (Riveted.)

Keeler Co., E., Williamsport, Pa.

Pipe. (Second Hand.)

Eagle Pipe Supply Co., Inc., New York, N. Y.

Marine Metal & Supply Co., New York, N. Y.

Pipe. (Spiral Riveted.)

American Spiral Pipe Works, Chicago, Ill.

Pipe. (Spiral Steel.)

Standard Spiral Pipe Works, Chicago, Ill.

Pipe. (Sewer, Vitrified.) [See Sewer Pipe, Vitrified.]

Pipe. (Wood.)

Wyckoff & Son Co., A., Elmira, N. Y.

Pipe. (Wrought Iron

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Pulleys. (Wood Split)

Caldwell & Son Co., H. W., Chicago, Ill.
Medart Patent Pulley Co., St. Louis, Mo.
Reeves Pulley Co., Columbus, Ind.
Salem Foundry & Machine Wks., Salem, Va.

Pulleys, Shafting and Hangers.

Caldwell & Son Co., H. W., Chicago, Ill.
Oresson-Morris Co., Philadelphia, Pa.
Golden's Foundry & Mach. Co., Columbus, Ga.
Jeffrey Mfg. Co., Columbus, O.
Jones & Laughlin Steel Co., Pittsburgh, Pa.
Link-Belt Co., Philadelphia, Pa.
Medart Patent Pulley Co., St. Louis, Mo.
Reeves Pulley Co., Columbus, Ind.
Wood's Sons Co., T. B., Chambersburg, Pa.

Pulverizers.

Austin Mfg. Co., Chicago, Ill.
Greendier Pat. Crusher & Pulv. Co., St. Louis, Mo.
Jeffrey Mfg. Co., Columbus, O.
K-B Pulverizer Co., Inc., New York, N. Y.
McLanahan-Stone Mach. Co., Houshington, Pa.
Raymond Bros., Impact Pulv. Co., Chicago, Ill.
Stedman's Foundry & Machine Wks., Aurora, Ind.
Western Wheeler Scraper Co., Aurora, Ill.

Pumping Machinery.

Affiliated Manufacturers Co., Milwaukee, Wis.
Alberger Pump & Condenser Co., New York, N. Y.
Cameron Steam Pump Wks., A. S., New York, N. Y.
Cook, A. D., Lawrenceburg, Ind.
Deane Steam Pump Plant, Holyoke, Mass.
Erie Pump & Equipment Co., Erie, Pa.
Emerson Pump & Valve Co., Alexandria, Va.
Holland Machine Co., New York, N. Y.
Keystone Pump & Well Engine Co., Beaver Falls, Pa.
Moffatt Machinery Mfg. Co., Charlotte, N. C.
Morris Machine Works, Baldwinville, N. Y.
Myers & Bros., F. E., Ashland, O.
Platt Iron Works Co., Dayton, Ohio.
Wood & Co., R. D., Philadelphia, Pa.
Worthington, Henry R., Harrison, N. J.

Pumps. (Air.)

Blakelee Mfg. Co., Du Quoin, Ill.

Pumps. (Air Lift.)

Sullivan Mchry. Co., Chicago, Ill.

Pumps. (Boiler Feed.)

Alberger Pump & Condenser Co., New York, N. Y.
Blakelee Mfg. Co., Du Quoin, Ill.
Cameron Steam Pump Wks., A. S., New York, N. Y.
Jeansville Iron Works Plant, Hazleton, Pa.
Moffatt Machinery Mfg. Co., Charlotte, N. C.
Murray Iron Works Co., Burlington, Ia.
Myers & Bros., F. E., Ashland, O.

Pumps. (Centrifugal.)

Alberger Pump & Condenser Co., New York, N. Y.
Buffalo Steam Pump Co., Buffalo, N. Y.
Cameron Steam Pump Wks., A. S., New York, N. Y.
Erie Pump & Equipment Co., Erie, Pa.
Holland Machine Co., New York, N. Y.
Jeansville Iron Works Plant, Hazleton, Pa.
Morris Machine Works, Baldwinville, N. Y.
Pacific Flush Tank Co., New York, N. Y.
Platt Iron Works Co., Dayton, Ohio.
Wood & Co., R. D., Philadelphia, Pa.
Worthington, Henry R., Harrison, N. J.

Pumps. (Deep Well.)

Cameron Steam Pump Wks., A. S., New York, N. Y.
Cook, A. D., Lawrenceburg, Ind.
Holland Machine Co., New York, N. Y.
Keystone Pump & Well Engine Co., Beaver Falls, Pa.
Layne & Bowler Co., Houston, Tex.

Pumps. (Dredging.)

Buffalo Steam Pump Works, Buffalo, N. Y.
Erie Pump & Equipment Co., Erie, Pa.
Holland Mch. Co., New York, N. Y.
Morris Machine Works, Baldwinville, N. Y.
Wood & Co., R. D., Phila., Pa.

Pumps. (Hydraulic.)

Buffalo Steam Pump Co., Buffalo, N. Y.
Cameron Steam Pump Wks., A. S., New York, N. Y.
Gardwell Machine Co., Richmond, Va.
Erie Pump & Equipment Co., Erie, Pa.
French Oil Mill Mchry. Co., The Ficus, O.
Holland Mch. Co., New York, N. Y.

Pumps. (Steam.)

Alberger Pump & Condenser Co., New York, N. Y.
Blake & Knowles Steam Pump Works, East Cambridge, Mass.
Blakelee Mfg. Co., Du Quoin, Ill.
Buffalo Steam Pump Co., Buffalo, N. Y.
Cameron Steam Pump Wks., A. S., New York, N. Y.
Clyton Air Compressor Plant, Cambridge, Mass.
Cook, A. D., Lawrenceburg, Ind.
Deane Steam Pump Plant, Holyoke, Mass.
Emerson Pump & Valve Co., Alexandria, Va.
Fairbanks-Morse & Co., Atlanta, Ga.
Keystone Pump & Well Engine Co., Beaver Falls, Pa.
Murray Iron Works Co., Burlington, Ia.
Snow Steam Pump Plant, The New York, N. Y.
Worthington, Henry R., Harrison, N. J.

Pumps. (Trench.)

Affiliated Manufacturers Co., Milwaukee, Wis.
C. H. & E. Mfg. Co., Inc., Milwaukee, Wis.

Pumps. (Turbine Driven.)

Sturtevant Co., B. F., Hyde Park, Boston, Mass.

Pumps. (Vacuum.)

Cameron Steam Pump Wks., A. S., New York, N. Y.

Pumps. (Water-works.)

Holland Mch. Co., New York, N. Y.
Platt Iron Works Co., Dayton, Ohio.

Pump Leathers.

Graton & Knight Mfg. Co., Worcester, Mass.

Punching and Shearing Machinery.

Bliss Co., E. W., Brooklyn, N. Y.

Railroads. (See Industrial, Agricultural and Commercial Opportunities.)

Railroad Equipment and Supplies. (New and Second-hand.)

American Frog & Switch Co., Hamilton, O.
Bailey-Lobby Co., The, Charleston, S. C.
Birmingham Rail & Loco. Co., Birmingham, Ala.
Cincinnati Frog & Switch Co., Cincinnati, O.
Gard, Geo. B., Cincinnati, O.
Fairbanks-Morse & Co., Atlanta, Ga.
Foster Co., L. B., Pittsburgh, Pa.
Georgia Car & Locomotive Co., Atlanta, Ga.
Hirsch Rolling Mill Co., St. Louis, Mo.
Hoffman & Co., Inc., R. O., Baltimore, Md.
Hyde, Chas., Pittsburgh, Pa.
Kilby Frog & Switch Co., Birmingham, Ala.
National Steel Rail Co., St. Louis, Mo.
Read Co., Howard W., Philadelphia, Pa.
Robinson & Co., Pittsburgh, Pa.
Sherwood, E. O., New York, N. Y.
Southern Iron & Equipment Co., Atlanta, Ga.
Steel Rail Supply Co., The, New York, N. Y.
Thaw & Williams, Cincinnati, O.
United States Rail Co., Cumberland, Md.
Weir Frog Co., Cincinnati, O.
West Virginia Rail Co., Huntington, W. Va.
Wilson & Co., E. H., Philadelphia, Pa.
Wilson Mach. Co., St. Louis, Mo.
Zelinko Supply Co., Walter A., St. Louis, Mo.

Railroad Frogs & Switches.

American Frog & Switch Co., Hamilton, O.
Cincinnati Frog & Switch Co., Cincinnati, O.
Kilby Frog & Switch Co., Birmingham, Ala.
Robinson & Co., Pittsburgh, Pa.
Sweet's Steel Co., Williamsport, Pa.
Weir Frog Co., Cincinnati, O.

Rails. (Steel.)

Carnegie Steel Co., Pittsburgh, Pa.
Foster Co., L. B., Pittsburgh, Pa.
Frank, J. E., Atlanta, Ga.
Gulf States Steel Co., Birmingham, Ala.
Hirsch Rolling Mill Co., St. Louis, Mo.
Hoffman & Co., Inc., R. O., Baltimore, Md.
Hyde, Chas., Pittsburgh, Pa.
Lackawanna Steel Co., Lackawanna, N. Y.
Levis & Co., Inc., R. O., Baltimore, Md.
National Steel Rail Co., St. Louis, Mo.
Republic Iron & Steel Co., Youngstown, O.
Robinson & Co., Pittsburgh, Pa.
Sherwood, E. O., New York, N. Y.
Southern Iron & Equipment Co., Atlanta, Ga.
Steel Rail Supply Co., The, New York, N. Y.
Sweet's Steel Co., Williamsport, Pa.
Tennessee Coal, Iron & R. R. Co., B'gh'm, Ala.
United States Rail Co., Cumberland, Md.
West Virginia Rail Co., Huntington, W. Va.
Wilson & Co., E. H., Philadelphia, Pa.

Rail Braces, Crossings, etc. (See R. R. Frogs and Switches.)

Railings and Grilles. (Brass.)

Newman Mfg. Co., Cincinnati, O.

Railways. (Industrial.)

Chase Fdry. & Mfg. Co., Columbus, O.
Cincinnati Frog & Switch Co., Cincinnati, O.
Hunt Co., Inc., C. W., West New Brighton, N. Y.
Link-Belt Co., Philadelphia, Pa.

Rams. (Hydraulic.) (See Hydraulic Ram.)

Reamers.

More Twist Drill & Mch. Co., New Bedford, Mass.

Reeds.

American Supply Co., Providence, R. I.

Refrigerating Machinery and Apparatus.

Hueston & Gramer Co., The, Detroit, Mich.
Portsmouth Engine Co., Portsmouth, N. H.
Remington Machine Co., Wilmington, Del.
Vilter Mfg. Co., Milwaukee, Wis.
Vogt Machine Co., Henry, Louisiana, Ky.
York Mfg. Co., York, Pa.

Reinforcing Bars. (See Concrete Reinforcing Bars.)

River and Harbor Improvements. (Dredges, Dock, Wharves, etc.)

Globe Dredging Co., Savannah, Ga.

Road Expansion Joints.

Philip Carey Co., The, Cincinnati, Ohio.

Road and Street Machinery.

Austin-Western Road Mchry. Co., The, Chicago, Ill.
Buffalo Steam Roller Co., Buffalo, N. Y.
Equitable Asphalt Maintenance Co., Kansas City, Mo.
Erie Machine Works, Erie, Pa.
Gallon Iron Works & Mfg. Co., The, Galion, Ohio.
Hill Manufacturing Co., Inc., The, Peoria, Ill.
Kelly Springfield Road Roller Co., Springfield, O.
Kilbourne & Jacobs Mfg. Co., Columbus, Ohio.
Ruggles-Coles Engineering Co., New York, N. Y.
The Automatic Shovel Co., Lorain, Ohio.
Universal Road Mchry. Co., Kingston, N. Y.
Western Wheeler Scraper Co., Aurora, Ill.

Road and Street Materials.

Barber Asphalt Paving Co., Philadelphia, Pa.
Barrett Mfg. Co., Philadelphia, Pa.
Rocmac Road Corp. of America, Cleveland, Ohio.
Semet-Solway Co., Solway, N. Y.
Standard Oil Co., Inc., Newark, N. J.
Texas Co., The, Houston, Tex.
U. S. Asphalt Refining Co., New York, N. Y.

Road Binders

Barber Asphalt Paving Co., Philadelphia, Pa.
Barrett Mfg. Co., Phila., Pa.
Semet-Solway Co., Solway, N. Y.
Standard Oil Co., Newark, N. J.
U. S. Asphalt Refining Co., New York, N. Y.

Road Roller. (Steam.)

Austin-Western Road Mchry. Co., The, Chicago, Ill.
Barber Asphalt Paving Co., The, Iroquois Works, Buffalo, N. Y.
Buffalo Steam Roller Co., Buffalo, N. Y.
Erie Machine Works, Erie, Pa.
Kelly Springfield Road Roller Co., Springfield, O.
Universal Road Mchry. Co., Kingston, N. Y.

Road Oil.

Gulf Refining Co., Pittsburgh, Pa.
Standard Oil Co., Inc., Newark, N. J.
Texas Co., The, Houston, Tex.
U. S. Asphalt Refining Co., New York, N. Y.

Road Preservatives.

Barrett Mfg. Co., Philadelphia, Pa.
Gulf Refining Co., Pittsburgh, Pa.
Semet-Solway Co., Solway, N. Y.
Standard Oil Co., Inc., Newark, N. J.
Texas Co., The, Houston, Tex.
U. S. Asphalt Refining Co., New York, N. Y.

Road Scarifiers.

Buffalo Steam Roller Co., Buffalo, N. Y.
Gallon Iron Works & Mfg. Co., The, Galion, Ohio.

Rock Crushers. (See Crushers, Rock.)

Rollers. (For Moving Houses, Machinery, Etc.)
Ogden, O. O., Baton Rouge, La.

Roller Covering Supplies.

American Supply Co., Providence, R. I.

Roofing. (Cement Tile)

American Cement Tile Mfg. Co., Pittsburgh, Pa.

Roofing. (Ready Prepared: Felt, Tar, Asbestos, Asphalt.)

American Sheet & Tin Plate Co., Pittsburgh, Pa.
Asbestos Protected Metal Co., Pittsburgh, Pa.
Barrett Mfg. Co., Philadelphia, Pa.
Cameron & Barkley Co., Charleston, S. C.
Chesapeake Roofing & Pipe Covering Co., Inc., Baltimore, Md.
John-Manville Co., H. W., New York, N. Y.

Roofing. (Metal Shingles.) (See Shingles, Metal.)

Bristol Metal Mfg. Co., Bristol, Va. Tenn.
Corryright Metal Roofing Co., Philadelphia, Pa.
Edwards Mfg. Co., The, Cincinnati, O.
Hyndman Roofing Co., Cincinnati, O.
Southern Sheet & Tin Plate Co., Ashland, Ky.

Roofing. (Slate.)

East Bangor Consol. Slate Co., East Bangor, Pa.
Genuine Bangor Slate Co., Easton, Pa.
Johnson, E. J., New York, N. Y.
Standard Slate Corp., Easton, Va.

Roofing and Siding. (Metal.)

American Sheet & Tin Plate Co., Pittsburgh, Pa.
Asbestos Protected Metal Co., Pittsburgh, Pa.
Cameron & Barkley Co., Charleston, S. C.
Corryright Metal Roofing Co., Philadelphia, Pa.
Edwards Mfg. Co., The, Cincinnati, O.
Hyndman Roofing Co., Cincinnati, O.
Southern Sheet & Tin Plate Co., Ashland, Ky.
Steel Products Co., The, Savannah, Ga.
Tennessee Metal Culvert Co., Nashville, Tenn.
Whitaker-Glessner Co., Portsmouth Works, Portsmouth, Ohio.
Youngstown Sheet & Tube Co., Youngstown, O.

Ropes. (Manila, Sisal, Hemp, etc.)

Broderick & Bascom Rope Co., St. Louis, Mo.
Columbian Rope Co., Auburn, N. Y.
Waterbury Co., New York, N. Y.
Wood's Sons Co., T. B., Chambersburg, Pa.

Ropes. (Wire.) (See Wire Rope.)

American Steel & Wire Co., Chicago, Ill.
Broderick & Bascom Rope Co., St. Louis, Mo.
Hunt Co., Inc., C. W., West New Brighton, N. Y.
Koenig's Sons Co., John A., Trenton, N. J.
Waterbury Co., New York, N. Y.
Youngstown Sheet & Tube Co., Youngstown, O.

Rope Drives.

Caldwell & Son, H. W., Chicago, Ill.
Oresson-Morris Co., Philadelphia, Pa.
Jones & Laughlin Steel Co., Pittsburgh, Pa.
Medart Patent Pulley Co., St. Louis, Mo.
Waterbury Co., New York, N. Y.
Wood's Sons Co., T. B., Chambersburg, Pa.

Rubber Goods.

Koreka Fire Hose Mfg. Co., New York, N. Y.
Goodrich Co., B. F., Akron, O.
Goodyear Tire & Rubber Co., Akron, O.

Rules. (Steel.)

Larkin Rule Co., Saginaw, Mich.
Starrett Co., L. S., Athol, Mass.

Saddles. (For Cotton Mchry.) (Oilless.)

Graphite Lubricating Co., Bound Brook, N. J.

Sales and Vaults.

York Safe & Lock Co., York, Pa.

Sand.

Arundel Sand & Gravel Co., Baltimore, Md.
Davison Chemical Co., Baltimore, Md.
Kirkpatrick Sand & Cement Co., Birmingham, Ala.

Sand. (Foundry.)

Newport Sand Bank Co., Inc., Newport, Ky.

Sand Dryers.

American Process Co., New York, N. Y.
Ripley Foundry & Mach. Co., The, Ripley, Ohio.
Ruggles-Coles Engineering Co., New York, N. Y.

Sap Stain Preventive.

Church & Dwight Co., New York, N. Y.

Sash Chains.

Niagara Falls Metal Stamping Works, Niagara Falls, N. Y.

Saws.

Gerlach Co., Peter, Cleveland, O.
Huth Bros. Saw Mfg. Co., Inc., Rochester, N. Y.

Saws. (Hack.)

Starrett Co., L. S., Athol, Mass.

Saw Rigs. (Portable.)

C. H. & E. Mfg. Co., Inc., Milwaukee, Wis.

Sawmill Dogs.

Soule Steam Feed Works, Meridian, Miss.

Sawmills.

Gainesville Iron Works, Gainesville, Ga.

Sawmill Machinery.

Bailey-Lobby Co., Charleston, S. C.
Cameron & Barkley Co., Charleston, S. C.
Mecklenburg Iron Works, Charlotte, N. C.
Schofield Iron Works, Macon, Ga.

Saw Sharpeners.

Carborundum Co., Niagara Falls, N. Y.
Vitrified Wheel Co., Westfield, Mass.

Saw Sharpeners and Files. (Cotton Gin.)

Carver Cotton Gin Co., East Bridgewater, Mass.

Scales.

Standard Scale & Supply Co., Pittsburgh, Pa.

Screens. (Fly, Window and Door.)

New Jersey Wire Cloth Co., Trenton, N. J.

Screens. (Mining, Stone, etc.)

Erdle Perforating Co., Rochester, N. Y.
Hendrick Mfg. Co., Carbondale, Pa.
Jeffrey Mfg. Co., Columbus, O.
McLanahan-Stone Mach. Co., Hollidaysburg, Pa.
Munn & Sons, Charles, Jersey City, N. J.
New Jersey Wire Cloth Co., Trenton, N. J.

Screenings. (For Concrete and Road Construction.)

American Ballast Co., Knoxville, Tenn.

Screws. (Machines.)

Progressive Mfg. Co., Torrington, Conn.

Screws. (Safety Set.)

Allen Manufacturing Co., Inc., Hartford, Conn.

Screw Machine Products.

Progressive Mfg. Co., Torrington, Conn.

Separators. (Dist.)

Buffalo Forge Co., Buffalo, N. Y.
Raymond Bros. Impact Pulv. Co., Chicago, Ill.

Sewer Flushing Siphons.

Pacific Flush Tank Co., New York, N. Y.

Sewer Joint Compounds.

Pacific Flush Tank Co., New York, N. Y.

Sewer Pipe. (Vitrified.)

Bannon Pipe Co., F. F., Louisville, Ky.
Blackmer & Post Pipe Co., St. Louis, Mo.
Cannelton Sewer Pipe Co., Cannelton, Ind.
Owensboro Sewer Pipe Co., Owensboro, Ky.
Pomona Terra-Cotta Co., Pomona, N. C.
Southern Sewer Pipe Co., Birmingham, Ala.
Stevens Sons Co., H. W., Moon, Ga.

Sewer Pipe and Drains. (Monolithic Concrete.)

Requarth Co., C. W., Charlotte, N. C.

Sewage Pumping and Disposal Apparatus.

Pacific Flush Tank Co., New York, N. Y.

Shafting. (Cold Rolled Steel.)

American Steel & Wire Co., Chicago, Ill.

Shafting. (Polished Steel.)

Jones & Laughlin Steel Co., Pittsburgh, Pa.
Medart Patent Pulley Co., St. Louis, Mo.
Pardee Works, Co., Perth Amboy, N. J.
Republic Iron & Steel Co., Youngstown, O.
Union Drawn Steel Co., Beaver Falls, Pa.

Shafting. (See Pulleys, Shafting and Hangers.)

Sharpening Stones.

Carborundum Co., Niagara Falls, N. Y.
Vitrified Wheel Co., Westfield, Mass.

Shearing Machinery.

Erie Foundry Co., Erie, Pa.

Sheet, Brass and Copper.

McKenna Bros. Brass Co., Pittsburgh, Pa.

Sheet Metal Work.

Atlas Metal Works, Dallas, Tex.
Dixie Culvert & Metal Co., Atlanta, Ga.
Lone Star Culvert Co., Houston, Tex.
Niagara Falls Metal Stamping Works, Niagara Falls, N. Y.
Salisbury Metal Culvert Co., Salisbury, N. C.
South Atlantic Blow Pipe & Sheet Metal Co., Savannah, Ga.
Steel Products Co., The, Savannah, Ga.
Tennessee Metal Culvert Co., Nashville, Tenn.
Virginia Metal & Culvert Co., Roanoke, Va.

Sheet Metal Working Machinery.

Bliss Co., E. W., Brooklyn, N. Y.

Sheet Steel and Iron.

American Sheet & Tin Plate Co., Pittsburgh, Pa.
Cincinnati Iron & Steel Co., Cincinnati, O.
La Belle Iron Works, Staunton, Va.
Republic Iron & Steel Co., Youngstown, O.
Southern Sheet & Tin Plate Co., Ashland, Ky.
Tennessee Coal, Iron & R. R. Co., B'gh'm, Ala.
Whitaker-Glessner Co., Portsmouth Works, Portsmouth, Ohio.
Wood Iron & Steel Co., Alan, Philadelphia, Pa.
Youngstown Sheet & Tube Co., Youngstown, O.

Shelving. (Steel) Vanit, Store, Etc.)

Van Hurlingen, J. M., Atlanta, Ga.

Shingles. (Metal.)

Bristol Metal Mfg. Co., Bristol, Va. Tenn.
Corryright Metal Roofing Co., Philadelphia, Pa.
Edwards Mfg. Co., Cincinnati, O.
Hyndman Roofing Co., Cincinnati, O.
Southern Sheet & Tin Plate Co., Ashland, Ky.

Shutters. (Iron.)

Boiles Iron & Wire Works, J. E., Detroit, Mich.
Chesapeake Iron Works, Baltimore, Md.

Shutters. (Steel Rolling.)

Kinnear Mfg. Co., Columbus, O.

Shutters. (Tin Clad.)

Victor Mfg. Co., Newburyport, Mass.

Silos. (Metal.)

Canton Culvert & Silo Co., Canton, O.
Dixie Culvert & Metal Co., Atlanta, Ga.
Lone Star Culvert Co., Houston, Tex.
Tennessee Metal Culvert Co., Nashville, Tenn.
Virginia Metal & Culvert Co., Roanoke, Va.

Skewers and Dowels. (Oilless.)

Graphite Lubricating Co., Bound Brook, N. J.

Slate. (Roofing, Sanitary, Structural, etc.)

East Bangor Consol. Slate Co., East Bangor, Pa.
Genuine Bangor Slate Co., Easton, Pa.
Johnson, E. J., New York, N. Y.
Standard Slate Corp., Easton, Va.

Sluice Gates and Appliances.

Goldwell-Wilcox Co., Newburgh, N. Y.

Smokestacks. (Iron and Steel.)

Ch

Steel.
Carnegie Steel Co., Pittsburgh, Pa.
Dietrich Bros., Baltimore, Md.
Gulf States Steel Co., Birmingham, Ala.
Hoffman & Co., Inc., R. O., Baltimore, Md.
Jones & Laughlin Steel Co., Pittsburgh, Pa.
La Belle Iron Works, Steubenville, O.
Lackawanna Steel Co., Lackawanna, N. Y.
Pardee Works, Co. Perth Amboy, N. J.
Republic Iron & Steel Co., Youngstown, O.
Tennessee Coal, Iron & R. R. Co., Birm'gh'm, Ala.
Union Drawn Steel Co., Beaver Falls, Pa.
Upon Nut Co., The, Cleveland, O.
Whitaker-Glessner Co., Portsmouth Works, Portsmouth, Ohio.
Wood Iron & Steel Co., Alan, Philadelphia, Pa.
Youngstown Sheet & Tube Co., The, Youngstown, O.

Steel (Tool).
Bourne-Fuller Co., The, Cleveland, Ohio.
McKenna Bros., Brass Co., Pittsburgh, Pa.
Union Drawn Steel Co., Beaver Falls, Pa.

Steel (Vanadium).
Carnegie Steel Co., Pittsburgh, Pa.
Union Drawn Steel Co., Beaver Falls, Pa.

Steel Buildings. (Designers, Builders.)
Amar, Bridge Co., of New York, N. Y.
Belmont Iron Works, Philadelphia, Pa.
Case Crane & Engineering Co., Columbus, Ohio.
Champion Bridge Co., Wilmington, O.
Chesapeake Iron Works, Baltimore, Md.
Des Moines Bridge & Iron Co., Des Moines, Ia.
Phoenix Iron Co., Philadelphia, Pa.
Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.
Richmond Structural Steel Co., Richmond, Va.
Schreiber & Sons Co., The, Cincinnati, O.
Snead Architectural Iron Works, Louisville, Ky.
Turner, C. A. P., Minneapolis, Minn.
Virginia Bridge & Iron Co., Roanoke, Va.

Steel Castings.
Crucible Steel Castings Co., Lansdowne, Pa.
Hoffman & Co., Inc., R. O., Baltimore, Md.
Riverside Steel Casting Co., Newark, N. J.

Steel Plate Work.
Casey-Hedges Co., Chattanooga, Tenn.
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.
Cokeville Boiler Works, Cookeville, Tenn.
Hoffman & Co., Inc., R. O., Baltimore, Md.
Memphis Steel Construction Co., Pittsburgh, Pa.
Phoenix Iron Co., Philadelphia, Pa.
Struthers-Wells Co., Warren, Pa.

Steel Protector. (Concrete Curb, Steps, etc.)
[See Curb Protector Steel.]

Steel Sheet Piling.
Carnegie Steel Co., Pittsburgh, Pa.
Frank, J. E., Atlanta, Ga.
Jones & Laughlin Steel Co., Pittsburgh, Pa.
Lackawanna Steel Co., Lackawanna, N. Y.

Stencils.
Baltimore Office Supply Co., Baltimore, Md.
Dorman Co., J. F. W., Baltimore, Md.

Stirrups. (Building.)
Chesapeake Iron Works, Baltimore, Md.

Stock Certificates, Bonds and Seals.
Baltimore Office Supply Co., Baltimore, Md.
Dorman Co., J. F. W., Baltimore, Md.

Stokers. (Hand.)
Huber Grate Bar & Stoking Co., Baltimore, Md.

Stokers. (Mechanical.)
Hobcock & Wilcox Co., New York, N. Y.
Westinghouse Electric & Mfg. Co., Pittsburgh, Pa.

Stone. (Building.)
Atlantic Power & Properties Co., Atlanta, Ga.
Bedford Steam Stone Works, Bedford, Mass.
Kirkpatrick Sand & Cement Co., Birmingham, Ala.

Stone. (Crushed.) [See Crushed Stone.]

Stone and Gravel Plants.
Weller Mfg. Co., Chicago, Ill.

Storage Batteries.
Ecc. Storage Battery Co., The, Philadelphia, Pa.
Westinghouse Electric & Mfg. Co., Pittsburgh, Pa.

Strapping Leather.
Graton & Knight Mfg. Co., Worcester, Mass.

Structural Steel and Iron.
Allegheny Steel Co., Pittsburgh, Pa.
Amar, Bridge Co. of New York, N. Y.
Belmont Iron Works, Philadelphia, Pa.
Bourne-Fuller Co., The, Cleveland, Ohio.
Carnegie Steel Co., Pittsburgh, Pa.
Case Crane & Engineering Co., Columbus, Ohio.
Champion Bridge Co., Wilmington, O.
Chesapeake Iron Works, Baltimore, Md.
Chicago Bridge & Iron Works, Chicago, Ill.
Cincinnati Iron & Steel Co., Cincinnati, O.
Des Moines Bridge & Iron Co., Des Moines, Ia.
Dietrich Bros., Baltimore, Md.
Grainger & Co., Inc., Louisville, Ky.
Hoffman & Co., Inc., R. O., Baltimore, Md.
Jones & Laughlin Steel Co., Pittsburgh, Pa.
Lackawanna Steel Co., Lackawanna, N. Y.
Memphis Steel Construction Co., Pittsburgh, Pa.
Phoenix Iron Co., Philadelphia, Pa.
Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.
Republic Iron & Steel Co., Youngstown, O.
Richmond Structural Steel Co., Richmond, Va.
Schreiber & Sons Co., The, Cincinnati, O.
Snead Architectural Iron Works, Louisville, Ky.
Southern Sheet & Tin Plate Co., Ashland, Ky.
Steel Products Co., The, Savannah, Ga.
Tennessee Coal, Iron & R. R. Co., Birm'gh'm, Ala.
The Van Dorn Iron Works Co., Cleveland, Ohio.
Vincennes Bridge Co., Vincennes, Ind.
Virginia Bridge & Iron Co., Roanoke, Va.

Stamp Pullers.
Kimmerman Steel Co., Lone Tree, Iowa.

Sulphur.
Union Sulphur Co., New York, N. Y.

Super-Heaters. (Steam.)
Hobcock & Wilcox Co., New York, N. Y.
Power Specialty Co., New York, N. Y.

Surveying Instruments.
Vebor & Co., F., Philadelphia, Pa.

Swinging Engines.
Duke Engine Co., Grand Haven, Mich.

Switchboards, Switches, etc.
General Electric Co., Schenectady, N. Y.

Switches. (See Railroad Frogs and Switches.)

Switchstands.
Vair Frog Co., Cincinnati, O.

Tackle Blocks. (For Wire or Manila Rope.)
Broderick & Bascom Rope Co., St. Louis, Mo.

Talc and Soapstone Powders.
Georgia Talc Co., Ashville, N. C.

Tanks. (Iron and Steel.)
American Bridge Co., New York, N. Y.
American Water Softener Co., Philadelphia, Pa.
Caldwell Co., Inc., W. E., Louisville, Ky.
Casey-Hedges Co., Chattanooga, Tenn.
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.
Chicago Bridge & Iron Works, Chicago, Ill.
Cokeville Boiler Works, Cookeville, Tenn.
Cole Mfg. Co., R. D., Newman, Ga.
Des Moines Bridge & Iron Co., Des Moines, Ia.
Dixie Culvert & Metal Co., Atlanta, Ga.
Hartley Boiler Works, Montgomery, Ala.
Hendricks Mfg. Co., Carbondale, Pa.
Keeler Co., E., Williamsport, Pa.
Lombard Iron Works, Augusta, Ga.
Lockport Boiler & Mfg. Co., Chattanooga, Tenn.
Memphis Steel Construction Co., Pittsburgh, Pa.
Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.
Schofield Iron Works, Macon, Ga.
Southern Boiler & Tank Works, Memphis, Tenn.
Struthers-Wells Co., Warren, Pa.
Tennessee Metal Culvert Co., Nashville, Tenn.
Twin City Boiler Works, Bristol, Va.-Tenn.
Virginia Bridge & Iron Co., Roanoke, Va.
Walsh & Weldner Boiler Co., Chattanooga, Tenn.

Tanks. (Wood.)
Oldwell Co., Inc., W. E., Louisville, Ky.
Davis & Son, G. M., Palatka, Fla.

Tapes. (Measuring.)
Lufkin Rule Co., Saginaw, Mich.
Starrett Co., L. S., Athol, Mass.

Telephones. (Supplies, Equipment.)
Piedmont Electric Co., Asheville, N. C.
Western Electric Co., New York, N. Y.

Telephone Service.
American Telephone & Telegraph Co.

Terra-Cotta. (Ornamental.)
Atlanta Terra-Cotta Co., Atlanta, Ga.
Pomona Terra-Cotta Co., Pomona, N. C.
Southern Building Material Co., Norfolk, Va.
Stevens' Sons Co., H., Macon, Ga.

Thresholds.
Cardwell Machine Co., Richmond, Va.

Tiering Machines. (Portable.)
Economy Engineering Co., Chicago, Ill.

The (Drain)
Oconee Brick & Tile Co., Milledgeville, Ga.

Tile (Interior)
Amer. Enam. Brick & Tile Co., New York, N. Y.

Tramways. (Portable.)
Amburns Co. (Tramway Department), New York, N. Y.

Tramways. (Wire Rope.)
Amburns Co. (Tramway Department), New York, N. Y.

Transformers.
Crocker-Wheeler Co., Ampere, N. J.
Triumph Electric Co., Cincinnati, O.

Trench Excavator. [See Excavator (Trench).]

Trucks. (Dry Kiln.)
Moore Dry Kiln Co., L., Jacksonville, Fla.

Trucks. (Platform, Freight, Mill, Factory, etc.)
Chase Fdry. & Mfg. Co., Columbus, O.

Trucks. (Storage Battery Auto.)
Westinghouse Electric & Mfg. Co., Pittsburgh, Pa.

Trust Companies. [See Bankers and Brokers.]

Tubes. (Boiler.)
Allegheny Steel Co., Pittsburgh, Pa.
Cincinnati Iron & Steel Co., Cincinnati, O.

Tube Well Strainers.
Cook, A. D., Lawrenceburg, Ind.

Tubing.
La Belle Iron Works, Steubenville, O.
Youngstown Sheet & Tube Co., Youngstown, O.

Tubing. (Rubber.)
Goodrich Co., R. F., Akron, O.
Goodyear Tire & Rubber Co., Akron, O.

Turbines. (Hydraulic.)
Allis-Chalmers Mfg. Co., Milwaukee, Wis.
Davis Foundry & Machine Wks., Rome, Ga.
Lefell & Co., James, Springfield, O.
Salem Foundry & Machine Wks., Salem, Va.
Smith Co., S., Morgan, York, Pa.

Turbines. (Steam.)
Allis-Chalmers Mfg. Co., Milwaukee, Wis.
General Electric Co., Schenectady, N. Y.
Sturtevant Co., R. F., Hyde Park, Boston, Mass.
Terry Steam Turbine Co., Hartford, Conn.
Western Electric Co., New York, N. Y.
Westinghouse Electric & Mfg. Co., Pittsburgh, Pa.

Important Information For Advertisers in Manufacturers Record

Publication day—Every Thursday.
Advertising copy not requiring proof must reach us one week in advance of publication day.
When proof is required, two weeks in advance.
Width of column, 2½ inches; length, 13 inches.
Four columns to page.

TYPOGRAPHICAL ARRANGEMENT

We desire to use, as far as possible, uniform display type and borders and avoid the use of black background cuts. The uniform border is two-point plain rule for all spaces less than a full page.

Copy for advertisements other than those to be used in special departments should be prepared for two-column measure for spaces less than a quarter page; for a quarter page or larger, in two or four columns.

Tile. (Mantel and Promenade.)
Hood Brick Co., B. Mifflin, Atlanta, Ga.

Tile (Structural)
Oconee Brick & Tile Co., Milledgeville, Ga.

Timber Estimating.
McDonald, Thos. J., Knoxville, Tenn.

Timbers. (Oreocuted.)
American Oreocute Works, New Orleans, La.
Republic Oreocute Co., Indianapolis, Ind.

Tin and Terne Plates.
American Sheet & Tin Plate Co., Pittsburgh, Pa.

Tobacco Machinery.
Buckeye Iron & Brass Works, Dayton, O.
Cardwell Machine Co., Richmond, Va.
Grote Mfg. Co., F., Evansville, Ind.

Tools. (Machinists.)
Holland Mfg. Co., Erie, Pa.
Morris Twist Drill & Mch. Co., New Bedford, Mass.

Tools. (Mechanical.)
Starrett Co., L. S., Athol, Mass.

Tools. Pneumatic.)
Chicago Pneumatic Tool Co., Chicago, Ill.

Torches.
Wall Mfg. Supply Co., F., Allegheny, Pa.

Towers. (Electric Transmission.)
American Bridge Co. of New York, N. Y.
Scale & Sons Co., Wm. B., Pittsburgh, Pa.

Towers. (Steel and Wood.)
Caldwell & Co., Inc., W. E., Louisville, Ky.
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.
Chicago Bridge & Iron Works, Chicago, Ill.
Cole Mfg. Co., R. D., Newman, Ga.
Des Moines Bridge & Iron Co., Des Moines, Ia.
Memphis Steel Const. Co., Pittsburgh, Pa.
Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.

Track Material. (Steam & Industrial Railroads.)
Upon Nut Co., Cleveland, O.

Tracton Engines.
Fairbanks-Morse & Co., Atlanta, Ga.
Holt Mfg. Co., Inc., The, Peoria, Ill.

Tramway. (Overhead.)
Amburns Co. (Tramway Department), New York, N. Y.

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Amburns Co. (Tramway Department), New York, N. Y.

Wagon Unloaders.
Bonney Supply Co., Rochester, N. Y.

Wall Coping.
Southern Sewer Pipe Co., Birmingham, Ala.

Wall Plugs. (Galvanized.)
Niagara Falls Metal Stamping Works, Niagara Falls, N. Y.
The Van Dorn Iron Works Co., Cleveland, Ohio.

Wall Tiles.
Niagara Falls Metal Stamping Works, Niagara Falls, N. Y.

Washers. (Graphite and Bronze, Oilless.)
Graphite Lubricating Co., Bound Brook, N. J.

Washers. (Ore and Phosphate.)
Bulley-Lobby Co., Charleston, S. C.
Cameron & Barkley Co., Charleston, S. C.
McLanahan-Stone Mach. Co., Hollidaysburg, Pa.

Washers and Rivets. [See Bolts, Nuts, Rivets, Studs and Washers.]

Water Filters. (See Filters, Water, etc.)

Waterproofing. (For Brick, Concrete, Granite, etc.)
Aquaer Co., The, Philadelphia, Pa.
Barrett Mfg. Co., Philadelphia, Pa.
Johns-Manville Co., H. W., New York, N. Y.

Water-Softening Apparatus. (Purifying.)
American Water Softener Co., Philadelphia, Pa.
International Filter Co., Chicago, Ill.
N. Y. Cont. Jewell Filter Co., New York, N. Y.
Tucker & Laxon, Charlotte, N. C.

Water-Wheels. [See Turbines. (Hydraulic).]

Water-Works Supplies and Appliances.
Allen-Scales Engineering Co., Inc., Nashville, Tenn.
American Cast Iron Pipe Co., Birmingham, Ala.
American Pipe & Const. Co., Philadelphia, Pa.
Bourbon Copper & Brass Wks. Co., Cincinnati, O.
Clark Co., H. W., Mattoon, Ill.

Water-Works Supplies and Appliances.
Clark Co., H. W., Mattoon, Ill.
Crawford & Sons, James B., Chicago, Ill.
Caldwell-Wilcox Co., Newburgh, N. Y.
Columbian Iron Works, Chattanooga, Tenn.
Donaldson Iron Co., Emaus, Pa.
Glamorgan Pipe & Foundry Co., Lynchburg, Va.
Keystone Pump & Well Engine Co., Beaver Falls, Pa.
Layne & Bowler Co., Houston, Tex.

Water-Works Supplies and Appliances.
Mason Iron & Steel Co., Hamilton, Ohio.
Pomona Terra-Cotta Co., Pomona, N. C.
Salem Fdry. & Machine Works, Salem, Va.
Standard Spiral Pipe Works, Chicago, Ill.
Stevens' Sons Co., H., Macon, Ga.
U. S. Cast Iron Pipe & Fdry Co., Burlington, N. J.
Wood & Co., R. D., Philadelphia, Pa.

Welding. (Oxy-Acetylene Process.)
Prest-O-Lite Co., Inc., The, Indianapolis, Ind.
The Searchlight Co., Chicago, Ill.

Welding Plants. (Oxy-Acetylene.)
Milburn Co., Alex. N., Baltimore, Md.
The Searchlight Co., Chicago, Ill.

Welding Apparatus. (Oxy-Acetylene Process.)
Prest-O-Lite Co., Inc., The, Indianapolis, Ind.
The Searchlight Co., Chicago, Ill.

Well Contractors. (Oil, Artesian, etc.)
Cook, A. D., Lawrenceburg, Ind.
Hughes Specialty Well Drill Co., Charleston, S. C.
Stothoff Bros., Flemington, N. J.

Well Tools and Supplies.
Cook, A. D., Lawrenceburg, Ind.
Keystone Pump & Well Engine Co., Beaver Falls, Pa.
Williams Bros., Ithaca, N. Y.

Wheels and Axles.
Electric Wheel Co., (Mfrs.), Quincy, Ill.
Oliver Mfg. Co., W. J., Knoxville, Tenn.

Wheelbarrows and Carts.
Sterling Wheelbarrow Co., Milwaukee, Wis.

Window Frames and Sash. (Fireproof.)
Detroit Steel Products Co., Detroit, Mich.
Edwards Mfg. Co., The, Cincinnati, O.
Wagner's Sons Co., J. F., Louisville, Ky.

Window Guards. (Wire.) [See Wire Goods.]

Windmills.
Caldwell Co., Inc., W. E., Louisville, Ky.

Wire. (Barbed Wire, etc.)
American Steel & Wire Co., Chicago, Ill.
Cyclohex Fence Co., Waukegan, Ill.
Roebling's Sons Co., John A., Trenton, N. J.
Youngstown Sheet & Tube Co., Youngstown, O.

Wire. (Galvanized and Annealed.)
American Steel & Wire Co., Chicago, Ill.
Gulf States Steel Co., Birmingham, Ala.

Wire. (Galvanized Telephone.)
American Steel & Wire Co., Chicago, Ill.
Gulf States Steel Co., Birmingham, Ala.

Wire. (Plain Steel, Hoop, etc.)
Gulf States Steel Co., Birmingham, Ala.

Wire Cloth. (Iron, Steel, Brass, etc.)
Caldwell & Sons Co., The, H. W., Chicago, Ill.
Eureka Supply Co., Chattanooga, Tenn.
Meyers Mfg. Co., The, Fred J., Hamilton, O.
New Jersey Wire Cloth Co., Trenton, N. J.

Wire Goods.
Bolles Iron & Wire Wks., J. E., Detroit, Mich.
Dow Wire & Iron Works, Louisville, Ky.
Dufur & Co., Baltimore, Md.
Dufur, Haggott & Co., Baltimore, Md.
Meyers Mfg. Co., The, Fred J., Hamilton, O.
New Jersey Wire Cloth Co., Trenton, N. J.

Wire Netting.
American Steel & Wire Co., Chicago, Ill.
New Jersey Wire Cloth Co., Trenton, N. J.

Wire Rope. [See Rope (Wire).]

Wire Rope Clips.
American Steel & Wire Co., Chicago, Ill.
Broderick & Bascom Rope Co., St. Louis, Mo.

Wood Distillation.
Struthers-Wells Co., Warren, Pa.

Wood Pipe. (For Water, etc.)
Wyckoff & Son Co., A., Elmira, N. Y.

Wood (Preservative.)
Barrett Mfg. Co., Phila., Pa.
Reeves Co., The, New Orleans, La.

Woodworking Machinery.
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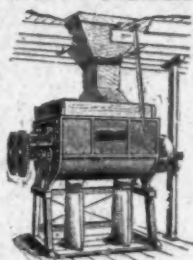
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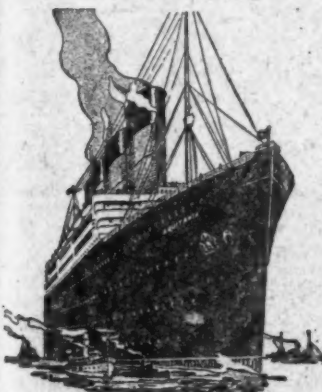
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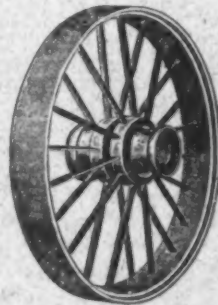
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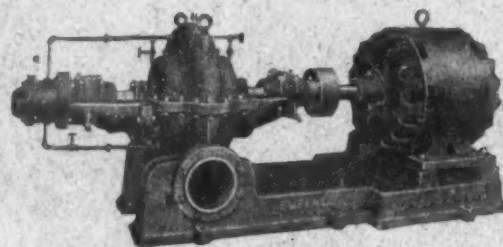
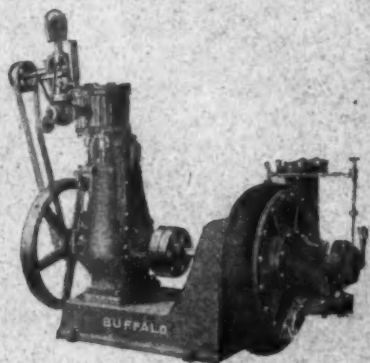


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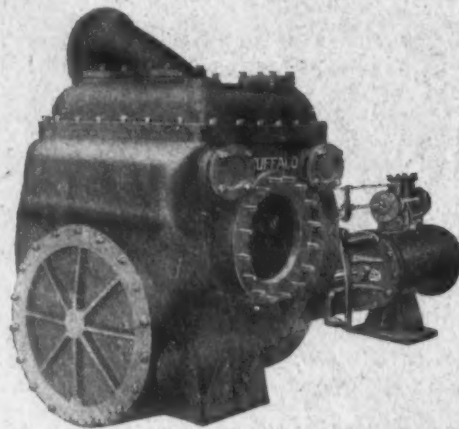
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